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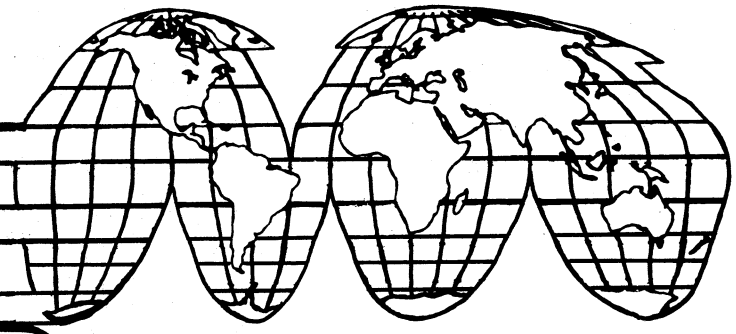

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Foreword

This draft paper is based on the following materials and experiences: (1) Field observations and consultations with government officials, university researchers, and development agency personnel in several east and northeast African countries, made in 1977 and 1980. The 1977 trip was undertaken for the American Association for the Advancement of Science (AAAS), on assignment from its Committee on Arid Lands. The objective was to examine problems of land degradation associated with the process of "desertification." The 1980 trip was made under the auspices of the Land Tenure Center of the University of Wisconsin-Madison, in connection with a request by the U.S. Agency for International Development for a position paper on African pastoral development. This paper is a part of that effort.* (2) The second source of materials consists of a collection of documents on Eastern African livestock development projects supplied by the World Bank and USAID. While this is by no means a complete set of all relevant papers, we believe enough was furnished to permit reasonably fair assessments of the nature and accomplishments of these projects. Possibly significant gaps or omissions are indicated in the text. (3) The third data source consists of a collection of key papers and documents on East African pastoralism and pastoral development, made in 1981 with the help of two research assistants employed on funds provided by the Land Tenure Center. (4) These documents are supplemented by detailed observational notes made on the two African field trips, plus notes and copies of documents on file in USAID mission offices in Kenya and Tanzania. (5) Other materials, collected in Egypt and the Sudan from government sources and Ford Foundation mission offices, will be referred to but not used intensively.

"East Africa," for the purposes of this paper, will be largely equivalent to the contemporary nation-states of Kenya and Tanzania. Eastern Africa includes Sudan, Ethiopia, Somalia, Uganda, Zambia, Mozambique, and Zimbabwe (we include Somalia and Ethiopia in the review of projects). Historians, when referring to East Africa, often do not include northern Kenya, considering this region to have greater affinity to Somalia and neighboring portions of Ethiopia, which are the "horn," a separate region. Northern Kenya is included in our definitions of East and Eastern Africa, since it contains pastoralist tribal societies some of whom are closely related to those in more southerly

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* See, in addition, James C. Riddell, "Land Tenure Issues in West African Livestock and Range Development Projects: A Position Paper," LTC Research Paper no. 77 (Madison: Land Tenure Center, University of Wisconsin, December 1982); and Steven W. Lawry, "Land Tenure, Land Policy, and Smallholder Livestock Development in Botswana," LTC Research Paper no. 78 (Madison: Land Tenure Center, University of Wisconsin, March 1983).

regions. Finally, Kenya and Tanzania contain most of the significant experiments in modifying pastoralist livestock production in the general eastern half of Africa, and the majority of the USAID and World Bank projects which have been sources of discussion and analysis. The paper contains more information on these two countries than on others. While we shall include Somalia and Ethiopia in project reviews, it was not possible to do fieldwork in those countries; hence, we do not feel equipped to examine Somalian and Ethiopian problems in detail. The omission of Sudan is deliberate, since the problems of Arab and Nilotic pastoralism in this country differ sufficiently from more southerly regions to require a separate report.

The format of the paper is midway between an original essay and a literature review. Bibliographic citations refer to literature the writer has found to be important in developing the issues or documenting events. That is, while the bibliography section is relatively large, it is by no means exhaustive. An enormous literature has accumulated on pastoralism in the recent decade, but not all of it is relevant to the issues discussed in this paper. Cutoff date for literature consulted for this paper was approximately October 1982.

The review of livestock development projects by country, appearing as sections VII through IX, was made possible, as noted, by a collection of project papers of various kinds, furnished by USAID and the World Bank. While these papers do not include all documents related to the projects concerned, we hope that those supplied are an adequate sample. A number of unreleased documents in USAID mission offices in East African countries were also consulted during the field work, and some of these are cited, especially in section X. However, use of these documents has been minimized since they are largely unavailable even to the professional reader.

The point of view of the paper is denoted by the term "political ecology." This means that we view the problem of Eastern African pastoralist populations and economy as ultimately one of political decision and action: settlement by the governments of issues of land tenure and use; allocation of grazing and water resources to pastoralists and other users in proportion to some reasonable plan concerning their contributions to the national agricultural and food economies of the countries concerned; and research on the problems of conservation and enhancement of vital physical resources important for livestock production. All this implies a change of perspective on the part of governments and their foreign advisers: a realization that animal industry should be given a priority status at least equal to that of crop agriculture, and that many things that have been viewed as traditional or primitive in indigenous production systems can serve important needs and may well be the most efficient means of exploiting marginal and difficult environments.

The term "draft" means that this paper, while suitable for its present release as a research document, falls short of a finished performance meeting book publication standards. Criticism and comments are therefore invited.

J.W. Bennett

St. Louis/Madison
1984

I. INTRODUCTION

A. A Note on East African History

We see little need for a detailed recounting of East African history. For the purposes of this paper, the modern history of the region begins in 1886 with the partition of the region into what became British and German protectorates or colonies. This event (formally acknowledged by treaty in 1890) was preceded by almost a century of complicated jockeying for control by indigenous and foreign interests: the slave trade; the coastal Arab Sultanates; French, British, and German agents, both commercial and political; and others. During this struggle for hegemony, the pastoral and cultivator societies pursued traditional, mainly subsistence, strategies of production. Their use of land and water resources and tenure and customary rights systems followed patterns worked out over a long period and represented a human-operated ecosystem of great complexity.

Economic development and social reorganization of East Africa was undertaken after 1886 as a practical matter by companies rather than by political administrations. Of the latter, the German was by far the most repressive, and the area to the south--roughly, modern Tanzania--experienced a series of disturbances which were met with great brutality, though never quelled. German agents continued for the rest of the nineteenth century to claim territories in the north under British control but these attempts were unsuccessful. By 1890, a British-German agreement fixed their boundaries, and the French were awarded control over Madagascar in recognition of their persistent claims in the general region dating from the 1860s. British hegemony over East Africa was finally established in World War I, with the German defeat, and the establishment of Tanganyika as a separate British colony.

The indigenous cultures of the several countries or geographical zones of East Africa differed considerably. Uganda was the seat of an important Bantu kingdom of considerable political and economic significance, while the coastal regions, and much of Kenya and Tanganyika were under the control of feudal-oriented sultanates based on old Arab commercial colonization, which were involved, in varying degrees, with the slave trade. Hinterlands in all East African countries remained the domain of tribal chiefdoms based on communal land occupancy. The variety of political symbolism, modes of authority, kinship and patron-clientage, distinctive religious systems, and specific resource tenure institutions and modes of production was very great. These differences in political styles and traditions, as well as economic and productive organization, persisted through the colonial periods and on into the contemporary era of independence. This great variety of institutions, plus geographical and ethnic localism, complicates the tasks of development under the modern nation-state framework.

Contemporary political boundaries reflect the earlier European areas of hegemony. The Kenya-Tanzanian boundary, for example, represents the line of

division between British and German spheres, and today, as in the past, it bisects the rangelands of the Masai pastoralists. Tanzanian Masai, with relatives on the Kenya side, as well as cattle buyers, continue to sell--smuggle--livestock across the border; this practice is currently abetted by the higher value of the Kenya shilling. The political disorders in Uganda and the recent Tanzanian intervention echo similar movements elsewhere by the British and the Zanzibarian sultanates in the nineteenth century.

Early development initiatives in the region were characterized by an emphasis on transportation (railroads), boundary-drawing, colonization by European settlers, and the creation of native reserves for pastoralists and some of the cultivator tribes. "Pacification" was perhaps the most common single concept associated with social development and control measures by both British and Germans, the former adhering to a more benevolent (but equally interventionist) policy on the whole.

Land tenure, in the broader sense, was the underlying theme of most of these interventions. The bewildering variety of tenure and use patterns required a settlement of the issues of occupancy before white settlement could begin. The problem was complicated by the fact that the East African tribal societies were in flux, as evidenced by the constant warfare, raiding, and counterraiding--a pattern that continued down into southern Africa. This dynamism was associated with the unstable or "adaptive" tenure institutions of communal land occupancy among pastoralists and by the equally unstable and competitive relations between pastoralists and cultivators. In periods of peace, "boundaries" existed and cooperative and symbiotic relations prevailed; in periods of drought or tribal aggrandizement, these relations would break down, and then later, reform. The European penetration and its consequences were simply an extension of this type of adaptive instability, only this time, the third force--the colonial powers--was determined to stop it.

One principal theme of this paper has been suggested in this abbreviated historical review: that the pattern of development in East Africa subsequent to independence in the 1950s and 1960s is in large part a continuation of forces and processes of change which extend back into the nineteenth century and even before.

(Reviews of East African history can be found in the following: Marsh and Kingsnorth 1966; Ingham 1962.)

B. East Africa as a Socionatural System

Academic historians of East Africa have customarily interpreted the principal movements and events in political and social terms. Among these, the slave trade, colonial repression, and colonization are viewed as the major forces affecting indigenous populations and shaping their reactions. A focus on the distinctive problems of indigenous production systems, and especially pastoralism, calls attention to a different set of factors which, while brought into being by the political and social, were of more direct influence. Helge Kjekshus, in a stimulating and controversial work, has referred to these as the collapse of a "man-controlled ecological system." Whether cause or effect,

there is no doubt that the European investiture of East Africa was followed by a series of changes in the physical environment, animals, and human populations of wide scope, and from which the socionatural systems of the region have not yet recovered. In this sense, development programs might be viewed as the continuation of the attempt to recover a reasonable balance in human-natural relationships. Humans and the physical environment in East Africa remain in the midst of a century-long process of readjustment.

The thesis proposed by Kjekshus may be summarized (and somewhat augmented) as follows:

1. The human population of East Africa, contrary to historical accounts which date a serious decline from the middle of the nineteenth century, actually increased slowly but steadily up to about 1890. With the beginning of the German Schutzgebeit and the British occupation and ultimate protectorate, the population began to decline, reaching its lowest point around 1930, after which it began a recovery. Population increase since, and especially in the 1960-present period, has been rapid.

2. Agricultural productivity under indigenous systems of management underwent a steady increase during the nineteenth century. This included both subsistence and market (mainly barter) mechanisms, and included both cultivators and migratory pastoralists, plus the many intermediate modes. That is, the data interpreted by Kjekshus broadly confirm E. Boserup's (1965) thesis to the effect that under tropical conditions, agricultural innovation is stimulated by increasing population (especially density). There is, according to Kjekshus, no substantial evidence to indicate, in contrast to the claims of many historians, that famines, diseases, and generally unfavorable population-food ratios characterized East African societies previous to European intervention.

3. The view which holds that breakdown of the population-food production relationship was indigenous, and pre-dated European impact, was based partly on the prevalence of the tsetse fly and its destructive effect on livestock regimes. That is, cattle trypanosomiasis was viewed as perennial, not epidemiological, or as an accumulative effect due to the inadequacies of traditional systems. The Kjekshus thesis, on the other hand, views both trypanosomiasis and the rinderpest as consequences of European intervention, and the associated disruption of the traditional methods of adaptation. The methods of controlling trypanosomiasis, summarized by Kjekshus from a number of neglected early accounts of agricultural management, included ways of avoiding districts known to be heavily infected with the tsetse fly carriers of the trypanosomes; to prevent cattle from eating certain forbs which were hosts of the insects; the use of emoluments and plants which protected the livestock against the flies; systematic bush-clearing; and other techniques. The regions which even in the twentieth century have remained forbidding to livestock were, before European involvement, productive for native varieties of cattle with the use of these indigenous methods of control. The rinderpest, of course, is known to have been introduced to East Africa by European importations of infected cattle from the Horn region.

The traditional techniques of trypanosomiasis management began to break down under the several impacts of German and British intervention. J. Ford's

studies (1971) appear to refute the charges made by British historians that traditional methods of "shifting cultivation" promoted the degradation of pasture and the return of bush, which resulted in the spread of tsetse. These claims, according to Ford, were followed by efforts to introduce European methods of land use, herd de-stocking, and soil and pasture grass conservation. These early development schemes, begun by the British around 1910 and earlier, had little effect on reducing the insect population or restoring infected regions to livestock production (especially for the vulnerable introduced breeds). The methods are viewed by Ford (and Kjekshus) as tending to worsen the situation by further hampering the ability of the indigenous agriculturalists and pastoralists to control the insect with the techniques mentioned previously. However, most of the objectives and many of the methods of development followed by the British remained the standards for projects and programs down into the period of independence.

4. The abundant wild game of East Africa in the twentieth century is now viewed by specialists in animal disease as contributing to human trypanosomiasis. Game conservation measures, introduced by the British and continued under most independent governments, tended to conserve or increase numbers of game--at least down to the 1950s, when increasing poaching and other methods began to have their effects. However, the period--roughly, from 1890 to 1940--apparently witnessed a rapid increase in wild game and, correspondingly, an increase in the specific animal hosts for varieties of the tsetse that infect humans. Likewise, the varieties that infect cattle also have hosts among game. The indigenous control methods of the East African ecosystems kept game under stricter control, and this seems to be attested by various historical accounts.

5. The general prosperity and expansionism of indigenous economies in the nineteenth century as interpreted by Kjekshus and others was also supported by craft industrialism, including iron-smelting and forging; salt-making from a variety of natural sources; cotton-weaving; and the usual basketry, ceramic, and ornamentation crafts. These products were widely traded and served to establish significant linkages between tribes and regions. Trade in agricultural commodities of all kinds, including livestock products, followed these channels. This system of manufacture and commerce suffered a breakdown in the twentieth century as the European powers introduced manufactured goods from abroad, a practice which, of course, has not ceased, despite frequent attempts by the British in the 1930s and more recently, in the 1960s and 1970s in Tanzania under Julius Nyerere, to reintroduce craft production.

6. The rinderpest epidemic of the 1890s is considered the dividing line between the successful indigenous development pattern of the nineteenth century and the disorganized situation of the earlier part of the twentieth. The disease, involving a severe infection of the mucous membranes, was apparently introduced into East Africa by Indian cattle brought in by the British and others introduced by the Italians from Abyssinia. The impact on the pastoral tribes was catastrophic: estimates of as many as two-thirds of the entire Masai tribal population starved to death during the epidemic, and estimates of as many as 95 percent of all livestock in East Africa died from the disease before it completed its epidemic spread. The political impacts were enormous: disruption of traditional authority systems; destruction of chiefly clans and patron-client networks; abandonment of manufacturing and trade channels; refugees

went on the march, destroying old tribal enclaves and communal usufruct land systems.

7. The rinderpest was soon followed by the rapid spread of human diseases, particularly human trypanosomiasis, and smallpox, also introduced from European sources. The sand-flea plague accompanied smallpox, incapacitating thousands of Africans. One general consequence of all these ecological and physiological disturbances was famine, beginning in the 1890s and continuing at intervals well into the twentieth century. This was the famine that the colonialists viewed as cyclical or normal in the indigenous socionatural system. It is perhaps understandable that colonial authorities and scholars were unwilling or unable to acknowledge the extent to which European intervention and its policies contributed to the disestablishment of the ecological system. In any case, as the twentieth century wore on, colonial wars, rebellions, persecutions, population resettlements, agricultural development schemes, and other measures introduced by colonial governments all had their effects.

There seems little doubt that the interpretations of East African ecological history contributed by Kjekshus, Ford, and others are correct in the main. However, it is a matter of various levels of causation. While Europeans may or may not have directly caused all animal and human disease vectors, their activities in disrupting delicate balances of human and animal populations and resources were responsible for a general reorientation of ecological relations. The slave trade, used by many historians as a primary factor in breakdown, is now viewed as having less significance: population reduction, or disruption of local production systems do not appear, by sober analysis of available accounts, to have been of sufficient magnitude to account for the disasters beginning in 1890. Also significant is the fact that the slave trade had diminished to a trickle by 1890 and was stopped shortly after. The major ecological breakdown occurred subsequent to this.

This review of aspects of the ecological and early development history of East Africa provides a second theme for this paper: that attempts at developing livestock regimes among indigenous populations must contend with a heritage of fear and distrust based on the awareness that European intervention produces disasters. Since country governments have, on the whole, continued to follow development policies with roots in the past, the reluctance of pastoralists and cultivators to accept such methods with enthusiasm is understandable.

At the same time, the situation is not quite this simple. Socionatural systemic breakdown of the type beginning in East Africa in the 1890s is never total, and partial reconstitution of the system, or at least significant components, has occurred in the twentieth century. In the past fifteen years, and especially in the past six or seven years, the dominant theme in anthropological analysis of the failure of pastoral livestock and social development schemes is the way the "traditional system" was in harmony with nature, and with the social and cultural milieux of pastoralism and agriculture. Recent development projects and programs, aided by foreign funds, are also viewed as contributing to the disestablishment of pastoralism as a way of life and as a production system.

There is, moreover, the curious episode of the concept of the "cattle complex" worked out by Melville Herskovits (1926) and other anthropologists in the 1920s and 1930s. This notion was based on the distinctive professional attitude known as the "ethnographic present." This refers to a need to reconstruct the patterns of native life previous to substantial European or American contact, and then to present the resulting depiction as contemporary. This appears to be precisely what Herskovits did in his early writings on Africa. Obviously aspects of the traditional system were operational, as already noted. However, in casting backward in time, a number of vital elements of the nineteenth century and the later reconstituted and revised systems were ignored: in particular, the agronomic sophistication of the native regimes, or their intricate "cultural ecology" of livestock and pasture use and management; their familiarity with markets and the commercial value of their animals (aside from or in addition to their insistence on the wealth factor of herds); and their skill with trading and symbiotic relations with cultivators and townsmen.

Thus, it would appear that foreign attempts at understanding these complex socionatural systems have repeatedly distorted their meaning and complexity, for good as well as questionable intentions. These distortions have accompanied, and in many instances, created, havoc in these systems, and if Kjekshus and others are correct, this has been a continuous process, not a recent episode. One therefore suspects a cyclical pattern, the early stages of which are documented in Kjekshus's volume and in the earlier book of John Ford. It is known that British treatment of pastoral populations in East Africa moved into a state of benign neglect beginning about 1920. This was disturbed by various events beginning in World War II and continuing down into the period of independence. Thus, pastoral peoples had a period of roughly 25 years--the interwar period--to reconstitute many features of the pre-1890 migratory grazing system.

II. EAST AFRICAN RESOURCES; LIVESTOCK; LAND TENURE; DEMOGRAPHY

The matters just sketched briefly will be reconsidered in selective detail in later sections. However, an interlude of background information of East African pastoralist production and populations is desirable to set the stage for consideration of development programs. (This section owes a great deal to Lundgren 1975--the current and most detailed single-volume treatment of land use in East Africa.)

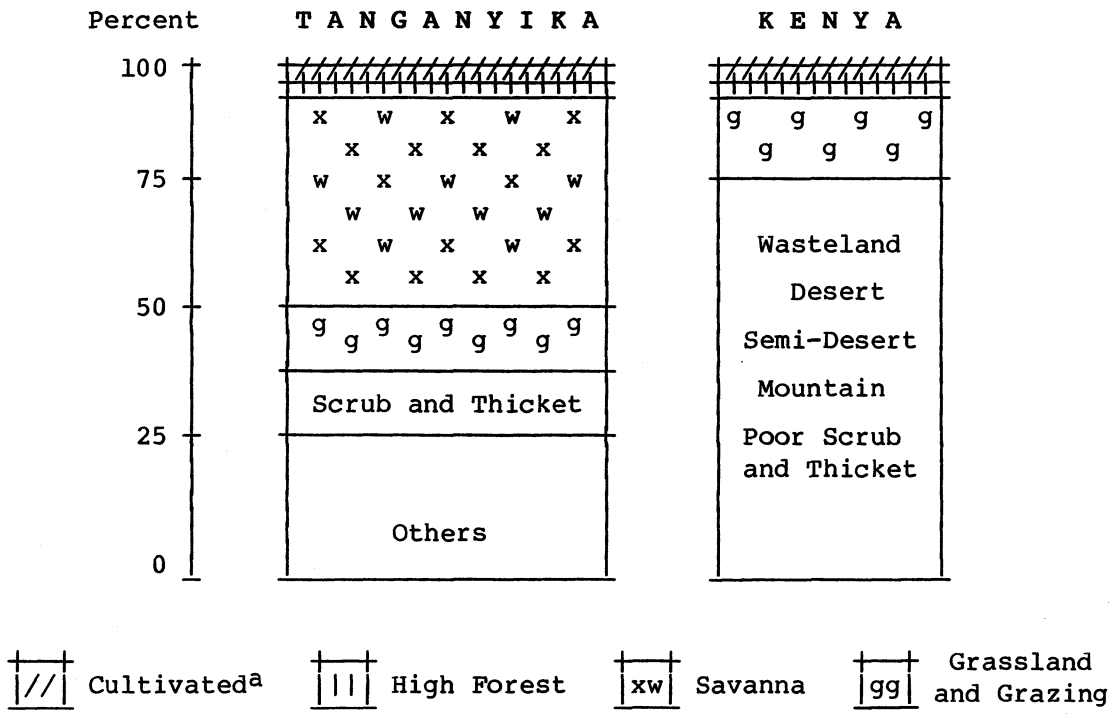
A. Land; Land Use; Livestock

Table 1 and Figure 1 summarize the main categories of agricultural land use for Kenya and Tanzania. In Kenya, the most intensive cultivation is found in the highland areas, which constitute around 5 percent of the total land area (Fig. 1). This is about 2.3 million ha, most of it in the highland area, between 1,500 and 2,750 m in altitude (or, on Table 1, about 20,000 sq km). Grazing lands in Kenya constitute about 85,000 sq km, but, contrary to general belief, more livestock, especially cattle, are raised in the highlands than in the very dry northern regions. The herds in the central and southern highland regions are beef animals and are more fertile and heavier than the animals produced by migratory pastoralists in the north and in the smaller Masai areas in the far south. Table 2 lists the livestock population for Kenya for about 1970. The pastoralist contribution to the total is a little over half as much as the combined totals of smallholder operators and subsistence cultivators in range areas.

For Tanzania, intensive farming areas are scattered rather than concentrated, since weather patterns are more variable than in Kenya. Districts of especially intensive effort are found around Lake Victoria; along the coastal strip; some areas of the northern highlands; around Mt. Kilimanjaro; and parts of the southern highlands. Areas devoted to "rough grazing," which includes all of the Masai pastoralism of the north, are somewhat less than the total amount of land in cultivation. Thus, Tanzania is mainly farming country; Kenya is divided, with pastoral regions more prominent. Both countries, however, are essentially agricultural insofar as the majority of the population in both (between 88 percent and 95 percent) is engaged in farming or pastoral activities. Kenya, far more than Tanzania, has developed its commercial sector, with substantial income deriving from banking, light manufacturing, services, and tourism. Perhaps the commercial development of Kenya in some sense makes up for its relatively lower crop potential.

In Tanzania, about half of the cattle population is owned by farmers who also raise crops. These cattle are grazed on communally operated pastureland. About 1.5 million head are owned by farmers in densely populated cropping regions; about 2 million cattle are raised by pastoralists; and another 3 million

FIGURE 1
BROAD CATEGORIES OF LAND USE



SOURCE: Lundgren 1975, citing Hickman and Dickens 1973.

[a] The small areas of cultivated land are obvious. Based on more recent figures, the present areas under various forms of agricultural use are presented in table 1.

range in various areas under less intensive cultivation, in varying combinations of cropping and transhumant pastoralism. Tanzania also has a number (currently nine) of government-operated cattle ranches for export beef.

In Kenya, pastoralists occupy approximately 74 percent of the land used for agricultural purposes; subsistence cultivators in range areas, 12 percent; smallholder farmers in high-potential districts, 10 percent; and 4 percent by about 90 large-scale, commercial, privately owned farms and ranches surviving from the colonial era. Most of the large very area of Kenya occupied by

TABLE 1

Distribution of Land According to Use: Kenya and Tanzania

TANZANIA [a]	(sq km)	(%)	KENYA	(sq km)	(%)
Total land area	883,600	100	Total land area	569,250	100
Agricultural area:					
Rough grazing	442,450	50	Agricultural area:		
			Grazing (meadows,		
Smallholder cultivation	38,800	4	pasture)	85,653	15
Large-scale farms	5,850	1	Paddocks, fallows	2,471	1
			Cultivated	20,096	4
Total agriculture	487,100	55	Total agriculture	108,220	19
Nonagricultural areas:			Nonagricultural areas:		
Woodlands, forests	376,600	43	Forests	22,670	4
High altitude	3,900	1	Other, mainly desert	438,360	77
Other	16,000	2			
Total nonagriculture	396,500	45	Total non-agriculture	461,030	81

SOURCE: Lundgren 1975, citing IBRD 1973, 1974.

[a] Excluding the islands of Zanzibar and Pemba.

pastoralists is too dry for commercial farming, and even for subsistence farming. The same goes for Tanzania--only the range area, as already noted, is much smaller in proportion to the total land area.

Substantial portions of Kenya and Tanzania are barred to high-grade beef cattle-raising because of tsetse infection. For Tanzania, this is about 65 percent of the range area; for Kenya, about 25 percent. Tick infestations, rinderpest, foot-and-mouth disease, and bovine pneumonia are also serious problems, but most of these have been brought under a measure of control in recent years by veterinarian and health services.

Varieties of cattle raised in Kenya (Lundgren says the data are valid for comparable areas in Tanzania as well), by ecological zone, are shown on table 2. Thus, the non-European (i.e., indigenously bred varieties with degrees of resistance to heat, drought, and disease) are found in the dryest portions of the country, i.e., with 600 to less than 400 mm annual precipitation. The European breeds, including some crosses between native and European varieties,

TABLE 2

Livestock Numbers,[a] by Species, and by Category of Farmers, in Kenya, 1970

TYPE OF LIVESTOCK	HIGH POTENTIAL SMALLHOLDER DISTRICTS		RANGE-SUBSIS CULTIVATOR (MIXED FARM) DISTRICTS		PASTORALIST DISTRICTS		LARGE FARM DISTRICTS		TOTAL
	no.	%	no.	%	no.	%	no.	%	no.
Grade dairy cattle	418	60	57	8	1	0	226	32	702
Beef cattle	35	8	42	10	-	-	345	82	422
Indigenous Zebu	3,446	39	2,292	26	3,069	35	-	-	8,807
Total cattle	3,899	39	2,391	24	3,070	31	571	6	9,931
Sheep and goats	2,312	28	3,018	36	2,719	33	268	3	8,317
Donkeys	36	20	30	16	116	64	-	-	182
Camels	-	-	-	-	516	100	-	-	516

SOURCE: Lundgren 1975, citing IBRD 1973.

[a] Numbers are in 1,000 head.

occupy the more humid areas, where they are raised by farmers, commercial ranchers, and dairymen. The cattle raised in the dry areas are used mainly to provide milk, blood, and hides, although pastoralists are now known to eat meat more frequently than previously thought. These animals also provide meat for commercial sale to farmers and townsmen. The city trade for middle- and upper-income and foreign populations, however, as well as the bulk of beef for export to similar consumers in other countries, is furnished by farmers and ranch cattle.

The "pastoralism problem," in large part, is a problem of beef. That is, large amounts of land are tied up in the production of animals which do not furnish a product in high demand in the growing economies. Granted that this land is of low productivity, it is perhaps understandable that national governments would like to make it more so, to improve their credit position, their foreign exchange earnings, and the domestic meat supply.

Sheep and goats are raised in Kenya and Tanzania wherever cattle are also; they are both very destructive of pasture, and goats also encourage soil

erosion. Horses, donkeys, and pigs are present in small numbers; camels are raised only by migratory pastoralists in northern Kenya. Numbers of these other livestock as of about 1970 are also shown on table 2.

Kenya has a prosperous dairy industry, operated mainly by Europeans, with European standards. About 700,000 purebred dairy cattle are estimated. Kenya exports dairy products to many other African countries, including Tanzania. The latter country has a very small dairy industry, although the Masai region in the north has been under development for dairying for some time, with meager results. Dairying requires considerable amounts of water, not only for the cattle, but also for forage and for cooling operations in milk production. This is a problem for Tanzania, with its interspersed semi-arid regions and its weakly developed irrigation systems. The Dodoma region, in the center of the country, chosen as the site of the new seat of government, is located in a semi-arid region where dairying would not be possible without extensive irrigation.

B. Pastoralist Demography

Table 3 contains data assembled by Stephen Sandford (1983) on the populations of various pastoralist groups in Eastern Africa:

TABLE 3

East African Pastoralist Populations

COUNTRY	POPULATION	PERCENT OF TOTAL COUNTRY POPULATION
Angola	500,000	8
Ethiopia	1,600,000	4
Kenya	1,500,000	12
Somalia	1,700,000	70
Sudan	3,900,000	22
Tanzanian Masai	100,000	@1 or less
Gambia	n.d.	n.d.

SOURCES: **Angola:** Sandford's estimate based on Carvalho 1974; **Ethiopia:** Sandford's estimate based on unpublished Ethiopian data; **Kenya:** FAO Expert Consultation 1972; **Somalia:** FAO Near East Regional Study 1972; **Sudan:** FAO Group Fellowship Study, n.d.; **Tanzania:** FAO Expert Consultation 1972.

These figures contain some implications for policy. Pastoralists constitute an unevenly distributed population and mode of production in the countries of Eastern Africa, ranging from 70 percent of the Somalian population to 1 percent or less for Tanzania. This by itself suggests that there can be no single solution to the pastoralist issue; it must be handled by the separate countries in their own ways, with concern for demographic significance or lack of it.

However, the number of pastoralists in any country will not necessarily correlate with the degree of concern or attention given them. Botswana, in southern Africa, with only about 2 percent of the national population classifiable as migratory pastoralists, has apparently had more success with its cooperative ranching schemes than other countries, this due in large part to the fact that important members of the national government come from the pastoralist minority, and to the fact that the majority of farmers are also cattle raisers (Steven Lawry, personal communication). This has encouraged more intensive planning and experimentation with circumscribed grazing regimes, with careful attention to the needs and interests of the tribal groups themselves. Since the majority of peasant agriculturalists in Botswana also raise livestock, pastoralist traditions and interests pervade the general culture, even though only a small minority are continually transient. (For a detailed research study of a typical Botswana mixed farming-pastoralist development scheme, see Gulbrandsen 1980.)

Kenya, with 12 percent of its population classifiable as pastoralists (mainly Masai, Samburu, Turkana, Bendille, Borana, and Gabbra tribal entities), has experimented with a variety of livestock, grazing, and cooperative production schemes, but most of its national agricultural development investment has gone into intensive cultivation, commercial and private ranching, and export crop production. Pastoralists in Kenya account for a small proportion of national income, whereas in an agrarian society like Botswana, the livestock output of the minority nomads, plus the majority farmer-pastoralists, accounts for as much as 30-35 percent.

In Sudan, pastoralists constitute 22 percent of the national total, but this fraction represents nearly 100 percent of the population of much of the western half of the country. The government has done relatively little with its pastoralists from the standpoint of sedentarization or ranching schemes. Most agrarian development programs in Sudan have concentrated upon large districts in the central and southern portions of the country, where crop-livestock farmers can benefit from irrigation, improved roads, marketing schemes, and other inputs. Many of these projects involve pastoralists since the affected tracts cut into traditional dry-wet season grazing migration routes. The projects--as, for example, those in the vicinity of El Obeid--have attempted to organize symbiotic relationships among pastoralists and farmers, with limited success.

Tanzania's development work with its Masai groups in the northern part of the country has attracted more attention than the relatively small numbers of pastoralists might warrant, as compared with other countries. This is because the region west of Arusha, in the Tanzanian Masai heartland, has been the site of many technical livestock projects, villagization experiments, and regional development programs. These projects have received careful scrutiny by a large

number of livestock, anthropological, and rural development specialists over a period of about 15 years, and have been influential in the general literature on pastoral development.

The population data on table 3 may be considered in relation to land types and land use in Kenya and Tanzania. Reliable information for these two countries has been assembled by B. Lundgren (1975), on his table 10, which we reproduce with minor changes as table 1 of the present paper. A comparison of our tables 1 and 3 yields the following ratios: in Kenya, the pastoralist fraction of the total national population--12 percent--occupies about 70 percent of the total land area of the country, which on table 1 are the arid and semi-arid grazing areas. In Tanzania, the Masai, constituting at most 1 percent of the total national population, occupies about 50 percent of the total land area, or mostly the portion designated as "rough grazing" on table 1. These figures are approximate, and save for the extreme arid regions of northern Kenya, cultivator populations, commercial ranches, and other more intensive modes of production are interspersed among pastoralist groups in these regions. Still, the pattern is clear enough: **in both countries a demographic minority occupies very large tracts of land.** It is no secret as to why this is so: the productivity of this land is low, and it takes large tracts to support livestock with pastoralist technology. However, in countries hard pressed by the forces of economic development, food supply, and international indebtedness, these low ratios of people to land constitute an economic and political challenge.

Table 4 presents population growth rate data assembled by Stephen Sandford for specific tribal pastoralist groups in Kenya. These data are part of a preliminary monograph (Sandford 1983) involving a comparison of the growth rates of migratory pastoralists and sedentary cultivators in all countries of Africa and the Middle East. The objective of the study was to determine if these peoples had significantly different rates of natural increase, along with other aspects of population dynamics. Some of the data pertained to pastoralist populations before and after the shift from migratory lifeways to semi-sedentary and sedentary, in an effort to determine if the change had an effect on natural increase.

Actual growth rates for settled cultivator districts in Kenya and other "Black African" countries were significantly higher: in the 1-2.8 range. Sandford's tentative conclusions for all the African and Asian countries in the survey are presented as follows:

"(a) In Black Africa there is some evidence, although it is not very strong, that the rate of **natural increase** (inherent growth) is less among pastoralists than in the countries as a whole or than among adjacent non-pastoral cultivators. The reverse may be true of Asian pastoral societies.

"(b) Where an ethnic or cultural group (tribe), e.g. Peuls, Bouzous, Bagghara, Bedouin, shifts from nomadic pastoralism to sedentary cultivation, its rate of natural increase appears to go up sharply, probably through an increase in fertility.

TABLE 4

Rates of Increase of Pastoralist Populations: Kenya

TRIBE	RATE OF INCREASE: EXPRESSED AS ACTUAL GROWTH RATE* (all refer to 1962-1969 period)
Samburu	no data
Masai	0.2
Turkana	0.8
Rendille	3.8
Borana-Gabbra	-4.6
Total Population of Pastoral Districts (includes some cultivators)	0.5 - 1.9

* "Actual Growth Rate" = increase allowing for loss through emigration.

"(c) In almost all countries concerned, the actual growth rate (after allowing for losses through emigration) of pastoral populations has been less high than that of the country as a whole in which they are found.

"(d) In a number of Asian countries the actual growth rate of pastoral populations has either been negative (i.e., the pastoral population has declined in size), as in USSR, Iran, Turkey, or has been negligible or very low (Mongolia, Saudi Arabia).

"(e) In the North African countries of Egypt, Libya, Tunisia, Algeria, Morocco, the pastoral population has also declined; in the case of nomadic pastoralists, very fast.

"(f) The dominant factor that causes the rate of actual growth in Asia and North Africa to be much less than in Black Africa is the high rate of emigration from pastoralism to the former. Some emigration out of pastoralism also takes place in Black Africa."

These conclusions suggest that: (1) In the situation that pastoralists find themselves in the contemporary world, factors other than the socionatural system of relationships between humans, animals, and physical resources influence the growth rate of pastoralist populations. (2) There is an apparent tendency toward intrinsically low growth rates among pastoralists as compared

with cultivator populations. (3) However, and in any event, contemporary conditions which provide occupational alternatives to pastoralists encourage out-migration, which shows up in lowered "actual" rates of population increase.

Awareness of relatively low population growth rates among pastoralists has led some development specialists to conclude that if one waits long enough, these populations will either remain static, or slowly diminish through city-ward migration plus a birth rate close to zero. The tentative evidence assembled by Stanford does not warrant such conclusions. Emigration may be a key factor, but in other countries and circumstances (e.g., Botswana), proximity to development projects and programs encourages high fertility rates and/or retention of population, giving pastoralists relatively high rates of increase.

On the other hand, the number of pastoralists in relationship to the land areas on which they raise livestock is small, as compared with cultivator populations. This low ratio of population to land area lies beneath the policy ambiguity of eastern African governments with respect to the pastoralist question, or rather, why it is conceived as a "question" or problem. Governments are concerned with the here and now, and coupled with the fact that there is no guarantee of population stability, or minimal demographic increases among pastoralists, the preoccupation of these governments with schemes that might move some of these lands into regimes of greater productivity becomes comprehensible.

C. Land Tenure: General History

As suggested in the discussion of ecological systems, during the nineteenth century tribal econo-ecology (if not polities) had reached a reasonably balanced state, with differing modes of production sorted into appropriate geographic zones. Migratory pastoralists inhabited the arid and semi-arid regions, and cultivators, the regions of better rainfall and soil, with the latter further stratified by regional differences in resources. The better agricultural regions were inhabited by tribes with sophisticated cropping systems and political governance. Forested regions or those with poorer soil were populated by swidden farmers. Land tenure systems were adjusted to modes of production, but considerable variation existed within these categories.

Pastoralists controlled land as communal property, grazing theoretically open to all and adjusted to the needs of herd owners who would arrange patterns of successive or rotational use among themselves. Pastoralists also recognized clan proprietorship of grazing territories, with agreements between clans for alternate use. No pastoralist group in East Africa recognized absolute individual herd-owner rights to particular bounded tracts of grazing land. The potential for abuse inherent in communal grazing combined with individual herd ownership and management was avoided in pre-colonial times by informal agreements to respect alternating use, or by confrontation and armed conflict to settle disputes. "Communal landownership," of course, really means that the ultimate rights to the land are vested in some collective body. It does not imply that individuals--herd owners, kin groups--do not exercise considerable right over particular tracts of land under particular circumstances or at particular times. That is, beneath the system of communal use, all pastoralists

in Eastern Africa, from Sudan to Tanzania, have a complex and adaptively changing system of customary rights of usufruct agreements concerning land at the local level. These invisible systems of tenure become visible, and the source of new disputes, when new nations abrogate unwritten tenure rules, e.g., as in the nationalization of all agricultural land in Tanzania and the Sudan.

Lands under the control of cultivator tribes fell under many different tenure systems. In the larger farming tribes, like the Kikuyu, land was a resource controlled mainly by extended families and, in some localities, individuals who approximated the role of "rich peasant." Other agricultural groups viewed land as belonging to clans or tribal entities. Grazing lands for these settled agricultural peoples were almost always communal, considered either under the control of clans or, perhaps more typically, as belonging to the village settlement. These tenure systems in farming tribes were under constant evolution and development, since in only a few cases were there clear-cut understandings, guaranteed by chiefdoms or kingdoms, of firm legal rights. Underlying these customary systems of group and individual tenure rights were the same usufruct concepts present in pastoral communal land control. In Uganda, the king of Baganda was considered to be the sole owner of all lands, but such tenure meant little in practice since actual rights at the local level consisted of the same dense texture of customary rights, private agreements, and the like noted for pastoralists.

We are not trying to say that pastoral communal tenure and the group or individual tenure systems of cultivators are one and the same. However, it is important to note that communal pasturage was by no means devoid of group and herd-owner understandings and rights.

The colonial period introduced the concept of legal individual tenure, as individuals and companies went through the motions of acquiring land from tribesmen they considered to be "chiefs," on the basis of documents called "treaties"--a procedure in process during the same period in the North American West, and with the same historical source in British institutions. When the British Kenya protectorate was affirmed in the 1890s, all these treaty claims were reexamined and most confirmed with legal certificates. These documents were considered by their holders as title deeds, and in most cases were considered so by British courts. Land still under direct tribal control, or in village grazing use, was not appropriated, although some of the better grassland, under migratory pastoralism, was appropriated for ranches. The protectorate government had no general land policy or tenure laws. This meant that, by omission, land used by tribal people for agriculture, grazing, or village sites had no formal or legal status of any kind. Technically, it was open to appropriation and subsequent certification.

In 1894, the protectorate announced the existence of a land policy which declared that all "vacant" land not obviously used by tribes for cultivation or settlement belonged to the government. This was called "Crown land" (as it is in Canada and other former British possessions): "whilst the Crown makes no claim to the general ownership of the land which is still regarded as vested in the chiefs and tribes except in so far as it has been duly alienated to grantees or concessionaires, all land outside African occupation is considered as waste Crown land." This included nearly all of the communal grazing land

used by pastoral tribal peoples. Thus, the first official land policy promulgated by the British in East Africa did not recognize title or ownership of grazing lands, save for those used by settled agricultural tribes and considered to belong to "chiefs," clans, or villages. In later years, this could be viewed as a "land grab," but since most of these lands were of low productivity, it is more likely that it was more of a way of assuming political control over territory, performed in ignorance and misunderstanding of the ecological system of migratory pastoralism. There is a similar history for other early European colonial regimes in Africa.

As time passed, the development of the country generated new needs for appropriation of land. By 1898, the building of railways and yards, as well as shops and settlements associated with the facilities, required more precise definitions. Hence, in 1902, an Order in Council stated that in all "native states"--i.e., tribal lands--without established government, the Crown would be considered as holder of title. Only "valid individual titles" were excluded, and this meant a few cases where native rights had evolved into individual ownership confirmed by the protectorate, or where European certificated titles existed inside the tribal domain.

These ambiguous regulations triggered an endless series of disputes, many of which were resolved only with independence. Among other things, the rules permitted creation of native reserves by the simple device of declaring that since the land was owned by the Crown, government had a right to confer a bound title on a tribal group--independent of any other customary claim on the land some other tribal or use-group might have. It was inconceivable to the British that a given tract of land might have a series of overlapping "owners" who had rights to use that land for different purposes at different times of the year or any period of time.

The 1902 program allowed for the establishment of Native Reserves: tracts of land set aside for indigenous tribal use. Such tracts were conceived with European concepts, thus abrogating, or ignoring, indigenous systems of tenure. The Order in Council stated that in dealing with Crown lands, "native rights and requirements" were to be respected, but the Order contained no definition or description of these rights. Thus, the rights of government and the European settlers were increasingly clarified, while native uses and tenure escaped definition.

In 1915, Kenya passed a Crown Lands Ordinance which stated that lands reserved for tribal use were still to be considered Crown land, i.e., wasteland belonging to government. However, the Ordinance did provide for reservation of lands in tribal use to be protected from alienation to individuals. No legal title was given natives to this land, or any permanent legal protection. Thus, the tenure system for natives was purely administrative, not constitutional. Tribal reserves were becoming increasingly crowded due to population increase, and soil exhaustion was becoming apparent.

This increasing pressure on land did give rise to restrictions over grants and sales of Crown land to non-Africans. The period from about 1920 to 1930 was marked by increasing conflict over land use and rights, and in 1930 the first Trust Lands Ordinance was proposed in order to set aside tribal lands in

perpetuity for the use of Africans. This ordinance was not passed, however, since it failed to provide proper legal guarantees, in the judgment of the Land Commission. The issue continued to be a matter of debate, and it came to be understood that all lands not held under valid private titles would be considered public land held in trust for the benefit of indigenous populations.

This developing tendency to respect African land rights--if not detailed local tenure systems--had been accelerated by the acceptance by Britain of the League of Nations' trusteeship mandate over Tanganyika (formerly German East Africa). Some of the principles were affirmed in 1923 in the Tanganyika Land Ordinance.

In 1954, a Royal Commmission proposed that Africans be given individual freehold title to land, save in most grazing areas where communal operations were standard: the famous Swynnerton Plan. The Arusha Conference of 1956 endorsed the idea and held that individual titles might be granted in cases where stable settlements and general productivity warranted, and especially in cases where persistent disputes over land proprietorship and use, stemming from earlier land policies, were significant. A system of land registration would be required to implement individual title assignments. Consolidation of excessively fragmented tracts could be accomplished at the same time. By 1958, the practice was under way in Kenya, where these principles of tenure assignment to individuals are still followed. New titles are not given; the document simply records existing rights and use-tenure and gives these legal status by affirming the individual's rights to the land. In Tanganyika, the policy was put into effect, although Julius Nyerere disagreed with individual freehold tenure, holding that all land should belong to the state--a policy which he put into effect eventually in the new nation of Tanzania.

The colonial land policies of Kenya continued with little change after independence. Individual freehold tenure for Africans continued to be recognized; migratory pastoralist grazing lands continued, in most cases, to be considered Crown land. However, about 1.2 million ha of former European land was appropriated and made into areas of settlement for Africans, who received freehold title. In 1969, the first recognition of legal tenure rights for migratory pastoralists was made in the form of the Group Representatives Act, which conferred rights to grazing land on pastoral tribes under conditions which would presumably encourage the formation of cooperative or group ranches--of which more later.

Thus, prior to independence in Kenya, two land reform programs were begun and still continue into the 1980s. One is the Land Consolidation Programme which evolved out of the freehold tenure plan. This program continues to assemble pieces of land scattered through inheritance and other causes over large territories, exchanging distant holdings for similar holdings near the settlement in order to give individual farm families a consolidated spread. The second reform program, accelerated in the early 1980s, consists of the transfer by purchase of land with British government loan funds from Europeans to native owners, either as smallholder tracts or as single large farms. This program has attracted criticism when government officials or their relatives have received large tracts, usually by purchase or bribery.

As previously noted, individual freehold tenure arrangements were just beginning in Tanzania before independence, but ceased with Julius Nyerere's accession to leadership. His policies laid emphasis on village settlement schemes, called the "Transformation Approach," which would be transformed into cooperatives with joint assignment of land. This scheme failed due to over-emphasis on handouts, which encouraged the settlers to rely on government and neglect production.

In 1967, the famous Arusha Declaration recognized Tanzania as a socialist state, with land as a formal property of the "people" (i.e., government). All land allotted to groups would be done so on a leased basis, with varying arrangements as to rent or term. The Ujamaa Village Program was the chief instrument of the agricultural land policy, and in effect was a reformed version of the older Transformation Approach. Ujamaa villages are cooperative production units as well as holders of land leases; they provide for citizen participation in politics and administration and participation in government marketing systems. By the mid-1970s, about 17 percent of the Tanzanian rural population resided in ujamaa communities, a rapid increase, although the figure has remained about the same, or declined slightly, since. The ujamaa program has suffered from a number of difficulties and problems which have been thoroughly examined by scholars (e.g. Hyden 1980) and which need not be described at this point, although we shall consider them later in the paper.

Summarizing: The legal basis of land tenure in modern Kenya is really individual title or freehold tenure--although that has not, of course, been completely realized. This form of tenure is believed to be the best means of encouraging vigorous agricultural production. Tanzania believes that socialist or collective tenure rights will produce the same result, although the results to date have not borne out this belief. So far as migratory pastoralist populations are concerned, the situation is about the same in both countries, with grazing lands in some regions enjoying the status of tribal reserves, or group ranching associations, or remaining in legal limbo as Crown Land in Kenya and public land in Tanzania. Since official land tenure in both countries is rooted in the institution of permanent settlement with assigned tracts for use of residents, the migratory habits of pastoralists prevent a clear definition of their rights. The effort in both countries is to persuade pastoralists to accept a fixed land-animal ratio of some kind, so as to permit definite land allocations. So long as the transient and rotational use of grazing lands continues, land tenure, whether government or private, resists clarification save for the group or cooperative ranching association formula--which, at the present time, is not adjusted to land use and needs.

Equally important is the need for definite land use policies and programs. Kenya has gone further than Tanzania in this regard, continuing many of the British programs of range conservation, watershed control, soil conservation, and land reclamation. Kenya has conducted continuous research on land use and conservation; Tanzania lacks such a program, although a few research projects have been conducted in regions of particular interest, like Dodoma, the site of the new capital city.

The need for a more equitable, and also scientific, approach to land tenure in East Africa was perceived by the Royal Commission on East Africa in the early 1950s; indeed, much of the report of that commission (see Mason

1955, for a review of the findings) dealt with the need to create a systematic plan for land tenure, distributed among the different production spheres. Pastoralists were viewed as especially deserving of help in this regard, since the government had failed not only to provide a confirmed tenure system, but also to relate the amounts of grazing lands assigned to the needs of the pastoralists and their herds (ibid.:28-30). The report urged the creation of Land Development Boards in each territory of East Africa, which would be charged with the responsibility of working out both land tenure and use arrangements for the different types of producers. Something like this was done--some of its results were described previously. However, as Mason noted (ibid.:29), "No real progress can be made until land tenure is altered and some form of transferable ownership introduced." Despite considerable progress through two governments, so far as the pastoralists are concerned, the situation remains much the same.

At the time of writing, the distribution of landownership or control in Kenya is markedly unequal. A large part--estimates are as high as one-third--of the best upland tracts in the central-southern highlands is still owned by Europeans and a few African farmers and by companies often based on European-African partnerships. Land reform has been pursued in Kenya since 1959, but intermittently, with due allowance for political pressures. The most vigorous period occurred in the late 1960s in the form of the "Million Acre Scheme," which involved the purchase of sections of the largest farms and the settling of about 34,000 native families in 135 settlements of varying density, depending on land productivity.

The legal categories of land in Kenya are as follows. (1) **Trust land**, an area of about 420,000 sq km, or 74 percent of the country, is held under indigenous systems of tenure, varying in detail from group to group. This includes both cultivators and pastoralists, although the largest fraction is land used by pastoralists for grazing. The better sections of the trust land are set aside by the government as group ranches, and the users are encouraged to organize around this facility. Some of this land has also been allotted by the government to individuals or families as private ranches, including a few Masai and Samburu. (2) **Private land** covers about 51,500 sq km, or 9 percent of the total land area, and includes most of the top-grade farmland. It includes the high-quality highland tracts owned by individuals and companies, mentioned earlier.

For Tanzania, there are two large categories. (1) The "alienated land," formerly held by individuals and estates or companies, totals about 800,000 ha. Most of this was in freehold tenure before independence; much of it remains in the hands of original owners, but in the form of temporary government allotments since all Tanzanian land is held by the state. (2) The second category is simply land operated by indigenous groups, mostly peasant smallholder farmers. Gradually local government administrations are taking over control of the allotments, under state law. Lacking a detailed national land survey, it is difficult to be more specific.

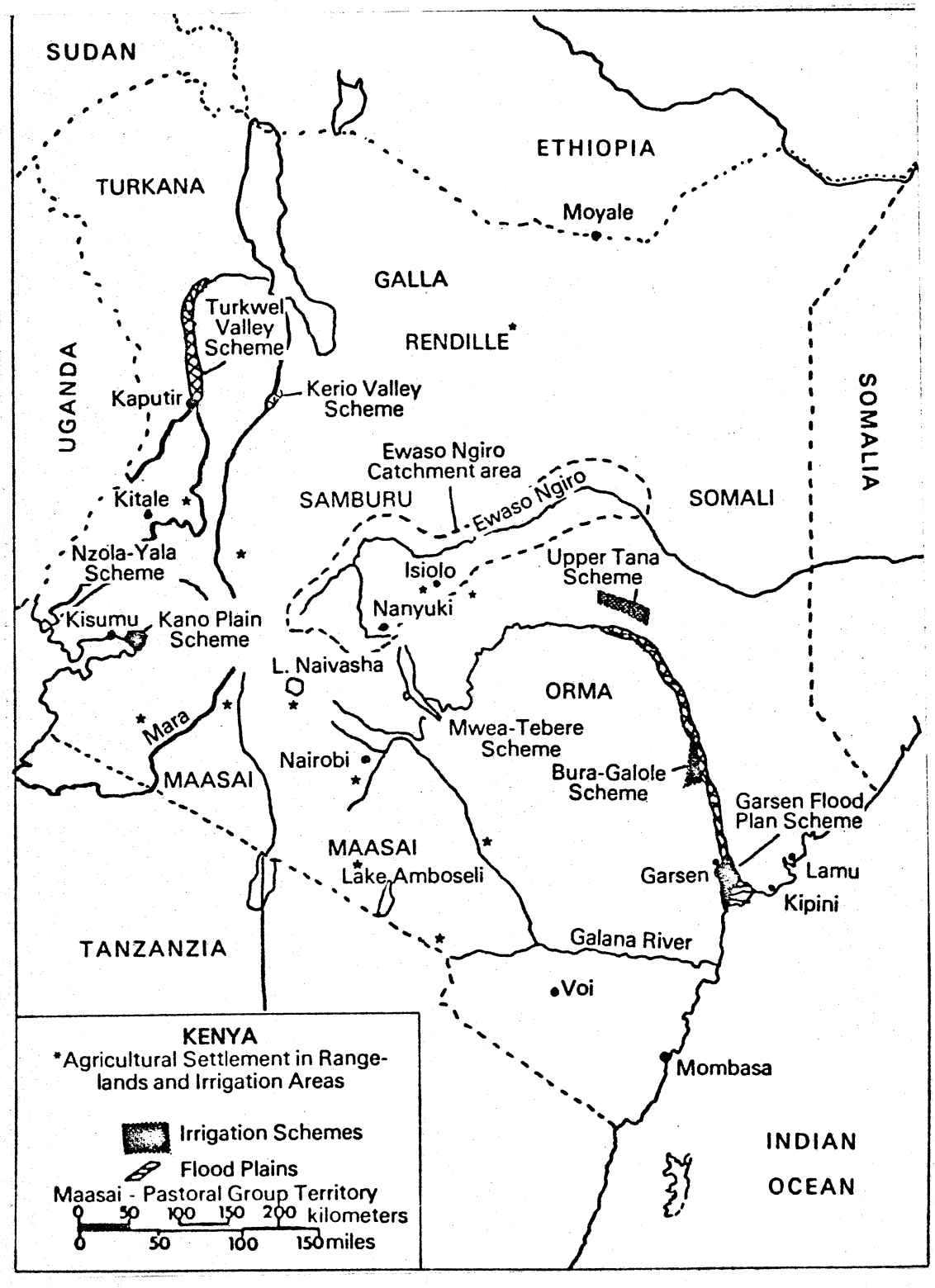
(This survey of colonial and post-colonial land tenure was based on Dandekar 1960; Sorrenson 1968; Kenya Government 1974; Lundgren 1975.)

The extent of penetration of pastoralist grazing areas by agricultural projects and establishments in Kenya is illustrated on the accompanying

figure 2, "Kenya: Agricultural Settlement in Rangelands and Irrigation Areas" (see p. 17), taken from Campbell and Axinn 1980.

FIGURE 2

Kenya: Agricultural Settlement in Rangelands (SOURCE: Campbell and Axinn 1980)



III. PASTORALISM: AN INTRODUCTORY DESCRIPTION

A. Pastoralism in Systemic Context

The basic knowledge of pastoralism as a way of life is derived from tribal studies made by ethnologists during the past 40 years. Nomadic pastoralism was viewed as a detached segment of mankind, an autonomous society deriving from remote historical origins and representing the classic stereotype of the isolated, culturally integral tribal culture (Galaty 1981b). The focus of interest in these earlier researches was on nomadic movement and the way this movement affected social organization and subsistence patterns. (For typical monographs, see Evans-Pritchard 1940; Gulliver 1955; Lewis 1972.) Later studies shifted to an ecological theme, being concerned with how a balance was maintained, under presumably undisturbed condition, between the human population, animals, and pasture resources. (For a monograph, see Dahl 1979; early attempts at synthesis or discursive modeling of the main lines of the two stages of ethnological research may be found in Spooner 1971; and Dyson-Hudson 1972.)

Most of the ethnological research tended to view pastoralism (or nomadism) as a pure type; that is, the objective was to provide a synthetic portrait of the pastoralist society as it might have existed before, or without, substantial intervention by Europeans or the new independence governments. Thus, the reconstructed "date" of such depictions and models would presumably be somewhat before 1895 in East Africa, consonant with the thesis of H. Kjerkhus, described earlier. However, as also previously observed, aspects of the pre-colonial system could be reconstituted at various times, even up to the present. (For symposia illustrating the thrust of the earlier work, see Monod 1975; and Irons and Dyson-Hudson 1972.)

Following independence, the new governments endeavored to modify the production regimes of pastoralists toward sedentary livestock production, or simply to reduce the amount of land available as pasture to migratory groups, in order to encourage more intensive use and management of resources. Such projects were continuations of colonial experiments, as we shall describe later. The schemes rarely fulfilled expectations, and in many instances disrupted pastoral systems and the relationships between pastoralists and their cultivator neighbors and associates.

These experiences led country governments and the international development assistance agencies to sponsor a number of researches designed to determine the reasons for "failure" of the schemes. ("Failure" is put in quotes since, as we shall note in a later section, it was judged relative to defined goals of the projects, and hence ignored certain changes in the outlook and activities of pastoralists which could assist in a significant shift in their economic, ecological, and social adaptational styles.) In addition to

these research projects, the development agencies sponsored a series of conferences designed to permit an exchange of data and views. These efforts, over the 1970-80 decade, enlarged our knowledge of pastoralism as an econo-ecological type, but they also supplied a fresh view of pastoralists as people required to cope with greatly altered geographic, economic, and political conditions. (For a symposium volume illustrating this broadened perspective, see Galaty, Aronson, and Salzman 1981.)

The relative failure of development schemes and projects was viewed as a matter of importance for two reasons. First, in many African countries pastoralists were an important source of animal products and nutrition; hence, their activities required strengthening and encouragement, not inhibition. Second, the persistent failure of development schemes was a matter of concern to ministries and technical assistance agencies since the schemes themselves were believed to be carefully conceived and planned. Success in agricultural development has never come easily; however, it was harder to achieve in the livestock programs involving pastoralists than for other modes of production. Clearly, reasons had to be sought.

We noted earlier that the East African schemes became a testing ground for pastoralist development; likewise, much of the new research took place in this region, along with the two comprehensive international conferences (Salzman 1980; Galaty, Aronson, and Salzman 1981; and for a still earlier conference, stimulated mainly by West African work, see Lefebure 1976). Research done by anthropologists and livestock and range specialists in West Africa, North Africa, and the Middle East has also made significant contributions to the enlarged understanding of modern migratory pastoralism, and we shall have occasion to cite some of it.

The thrust of much of the work of the past decade has been to attempt to view migratory pastoralism as a system larger in scope than a tribal entity or a group of herd owners speaking a common language. This came about as a result of the growing realization that one major reason for the disappointing results of so many projects was their concentration on particular segments of an interconnected whole. By intervening in one segment, key processes of linkage and dependence were interrupted, leading to system breakdown. The most typical evidence was the abuse of pasturelands and the failure of programs for reducing the number of livestock to correct this abuse. Much of the later development-inspired research and the conferences were devoted to defining the dimensions of pastoralism and its key interdependencies (or what Little 1980 calls the "total environment"). At the time of writing, this work is really just under way. It is doubtful if a complete, whole-system model will ever emerge, for two reasons. First, many parts of the system are unique to particular regions and groups; hence, what is needed is analysis of the most important series of system components and their linkages for particular cases. Second, since some of the pastoralist system components or relationships are universal, these are very general and a matter of common knowledge.

The two earliest systemic models of pastoralist production are: Carr 1977, which concerns the Dasanetch tribe of the Ethiopia-Kenya northwest borderland; and Picardi 1974, which models the pastoralism of several groups in the Sahel. Carr's model was influenced by geographic concepts of systems dynamics; Picardi's, by a more formal rendering of general systems theory and method.

A third model, with greater detail but narrower focus, is the livestock breeding and population analogue model produced by G. Dahl and A. Hjort (1976). This study for the first time established a basic calculus of pastoralist animal dynamics, but it did not include such factors as range conditions, water availability, consumption patterns and demands of the human population, variations in herd management, and other systemic factors known to influence herd population and its changes. The published study did not include the mathematics or algorithms of the procedures of analysis, so that if one wished to apply their findings to a concrete case, it would be necessary to replicate their results in order to establish a methodology.

A fourth attempt, which builds on the Dahl and Hjort (1976) model, but goes beyond it in the sense of establishing a clear methodology, was in an advanced stage in 1982 at the University of Arizona under the direction of T. Downing. This is a computer simulation model which replicates the Dahl-Hjort animal population dynamics but adds some of the missing factors. That the Downing et al. model resides in an on-line inexpensive micro-computer might permit its utilization in a field setting. The model adds rangeland conditions (biomass conversion ratios; wet-dry years; classes of grazing; water accessibility), and it can calculate the demand for labor, water, and pasture conditions based on different herding strategies (derived from available studies). The model is written on a general format which permits it to be easily "turned" --fitted--to particular regional conditions, types of livestock, and economic conditions. This Downing et al. model is the most ambitious and potentially useful produced thus far, and is closer to a systems format than the Dahl-Hjort, although it is focused exclusively on livestock production and does not involve other sources of income which might influence the livestock regime.

A fifth, a specialized econometric model of migratory pastoralist production, is found in Ferguson 1980. This is an attempt to model (or at least to present the basic information and data categories necessary for the construction of a model) Sahelian pastoralist production as a more or less sedentary ranching system. That is, Ferguson describes the conditions and constraints which would have to be introduced into these economies if they were to make the conversion to a full ranching regime on a generalized Western marketing pattern. Elements of Ferguson's presentation probably could be inserted into the Downing computer model of herd breeding and management. (For information on the current status of the model, write Dr. Theodore Downing, Dept. of Anthropology, University of Arizona, Tucson.)

The economic systemics of migratory pastoralism has three principal foci: (1) raising livestock for consumption and sale; (2) engaging in other income-producing activities when the occasion demands; and (3) establishing exchange relationships with other producers and economic agents in regional economic systems. The analysis of the full range of economic activities of migratory pastoralism is a topic not fully developed in the literature, since the emphasis in most research was on the subsistence-livestock phase. As previously suggested, this was the result of two areas of professional interest: the ethnological concern for tribal pastoralists as social subsistence systems featuring livestock instead of crops; and the strong orientation in development programs toward improving the management of livestock so as to increase commercial sales.

The result is that the great majority of research on pastoralists is concerned with the livestock regime. However, in varying degrees pastoralists engage in crop farming; commercial trading of animals; trading of craft articles of leather, metal, and jewelry; supplying wage labor for farmers, town industries, and government construction projects. The extent to which pastoralist groups engage in these activities varies by their location: those in contact with farming communities or towns are more likely to be involved in these "multi-resource" pursuits than the more remotely located groups.

With respect to the third component of pastoralist economy--the regional exchanges and extensions--the issue in recent years has been the tendency for these networks of economic activity to change under the impact of development. The so-called "symbiotic" barter-and-sales economy in which pastoralists furnished animal products to farmers and townsmen in exchange for vegetables, forage, and tools has selectively withered as surplus farm commodities and other goods have been channeled into regional wholesale and retail markets under government regulations and incentives. Rising urban populations have absorbed food stocks which formerly were used in local consumption. Exchange rates of livestock for other products were important stabilizing elements of the regional economies of East Africa and served as well to maintain the cultural-ecological balance of pastoral production. With the decline of the integrated regional exchange systems, livestock prices acquired considerable movement and uncertainty, making pastoralists reluctant to sell--and thus added to the tendency toward "negative price response," or the "backward-bending supply curve" now well known for pastoralists not only in the tribal context but also in modern ranching communities in North America and Australia (Low 1980). (The reasons for reluctance to sell animals, even in periods of high prices, are many, and we shall return to the problem later.)

East Africa has a "transitional economy" in the sense that the indigenous population is required to use cash as the major medium of exchange, even though a varying fraction of production continues to be used for subsistence. The pastoralist population thus finds itself in the middle: its successful subsistence economy, plus its long-term barter exchange with townsmen and cultivators, has been greatly modified by developing commercial relations. While pastoralists have always sold a proportion of their stock, recent economic change, plus the insistent development programs of the country governments, now requires them to sell more in order to obtain the money they need to live and to retain a place in the regional networks. This means that governments need to find a niche in the economy for pastoralists to permit them to develop a substitute for the food obtained from animals. Equally important is some means for them to invest their cash income from animals in productive enterprise. Investments in real estate, gold, and houses are typical of some groups, but not of others, particularly the Masai, who have clung to tribal customs. Moreover, such investments do not always yield the leverage needed in a modern economy.

Involvement of pastoralists in the emerging commercial systems has the effect of increasing income disparity among the herd owners. The larger owners find it easier to enter the modern economy, and many are rapidly amassing wealth, control over property, land, and labor. Smaller herd owners lose ground and turn to wage labor in the towns and cities. Many of these

proletarian pastoralists receive the backing of relatives who continue to raise livestock; thus, as Anders Hjort concludes, pastoralism in some regions supports the modern economic sector by providing partial subsistence for the families of wage laborers (1981:141).

Others turn to farming as a way into the new economic system. Crop raising was never foreign to pastoral tribes, nearly all of whom have had cultivator sections, or have resorted to farming during periods of drought or other disturbance of the livestock regime (for a study, see Haaland 1972). Again, the wealthy herd-owning kin groups can invest in farmland and even subsidize village cultivators in other tribes to produce forage for their herds. The poor pastoralists, on the other hand, tend to become transformed into smallholder peasants who exist as marginal producers or who are caught up in agrarian development programs. No statistics exist to tell us how common this is, or what its effect on livestock production over time may be. Again, pastoralism is caught up in a transitional era in East African economic development, and it is difficult to say just what the final outcome may be. However, increasing wealth for the few and the creation of extensive patron-client systems among the wealthy and the poor seem to be the order of the day.

(For other analyses of the regional and "multi-resource" basis of pastoralist economy, see Salzman 1972, in re Iranian pastoralists; Konczacki 1978, general pastoralist economies, East and Southern Africa; Aronson 1980; Swidler 1981, also Middle East.)

Some development programs are designed to integrate pastoralists into dryland crop farming communities as livestock producers, users of farm-raised forage, and mixed farmers. The best-known of these schemes is the ASAL (arid-semiarid-land) approach in Kenya (Ngutter 1979). Where pastoralists (like the Masai in the Kajiado District in southern Kenya) are moving into agriculture as an important adjunct to livestock, programs like ASAL would permit them to receive seed for drought-resistant crops, loans for development of difficult soils, and facilitation for developing exchange relationships with local marginal farmer-settlers in the region (in the 1970s, there were hostilities between the Masai and these newcomers). Aside from the ASAL program in Kenya, the Sudanese have been operating integrated pastoralist-farmer programs in western Sudan and the El Obeid region for a number of years, and a similar project was recently inaugurated in the Upper Blue Nile, where pastoralist refugees from Ethiopia have congregated and are interacting with local farmers. These integrated programs have their difficulties, but they offer the first approach to "pastoralist development" which appears to take account of the changing realities of resource distribution and modes of production in East Africa.

A relatively neglected issue in pastoralist livestock development concerns stratification of segments of the production process. In fully developed commercial systems, as in North America, a mode in which animals are bred, raised, and finished for sale in a single operating unit becomes increasingly rare. In its place, parts of the production process occur in different economic and resource sectors: breeding is in the hands of ranchers, who sell calves or young steers, which are then transferred to farmers or farmer-ranchers who sell sires or breed heifers to ranchers, and so on. These and other segments

of the system are located in different environments: e.g., ranching in grassland range regions; finishing in sub-humid or humid areas where feed can be raised with the more adequate moisture supply.

In East Africa, a variant of this type of stratification appears in the form of market segregation: pastoralist livestock are raised for subsistence and for meat and other animal products sold or bartered to agricultural village communities; farmer cattle may form the bulk of animals raised for the urban markets; and private and parastatal ranches may serve the high-quality export beef markets. However, some elements of the production stratification system are appearing, as in the case of Masai pastoralists who interact with farmer-settlers to trade young animals for feed with which to finish a portion of their herds. In Kenya, some programs assist in transferring young animals from the ranges of the dry northeast to farmer-feeders in the south, but with limited success. Dairying by some pastoralist groups has offered another segregative opportunity, although this has had considerable difficulty because of lack of, or high cost of, reliable forage supplies or sanitary facilities. As noted, some pastoralist livestock projects have aimed at production stratification as a specific target goal, but often without full understanding of the necessary supports and level of integration of the national economy this requires. Markets are not fully developed, and the financial incentives required to permit profitable or even simple survival-level specialized regimes are not present. For some time to come, most livestock production in East Africa will remain in the hands of pastoralists, farmers, and the commercial ranches and parastatals--although even the latter have experienced considerable difficulty in maintaining efficient or profitable operations. In any case, a move toward entrepreneurial emphases in production must accompany the emergence of a true stratified production system on regional or national bases. For pastoralists, such entrepreneurial movements are just beginning. Most pastoralists, even though they may sell increasing numbers of animals, find it necessary to maintain all phases of the production system.

As pastoralists become part of complex modern systems of exchange, the issues of concern extend beyond the classical topics of social organization, herds, ecological ratios, or range and water management. Pastoralist peoples must find a place in the emerging national social systems; hence, they need to be considered in the contexts of employment, income level, standard of living, socioeconomic class and power position, job training and skills, and education. As J. Nkinyangi (1981) shows, for Kenya, education has become a major factor in social and occupational advancement, and pastoralists are increasingly disadvantaged since their mobility and lack of incentive to take advantage of facilities available in rural settlements make it difficult for them to send children to school. The government has tried a number of experiments to assist them: waiving tuition in the boarding schools; providing mobile schools in automotive trailers; and special fellowships. None of these works very well, partly because the government is unwilling or unable to provide funds for the extra costs associated with special or unusual facilities. The Kenya Masai do not use the facilities mainly, Nkinyangi feels, because of the inadequate instruction, relatively high fees, poor food, and unreliable transportation. Cultural conflicts between cultivator and pastoralist children were also serious. (See Sandford 1978 for other discussions of the social services issue.)

In an emerging national social system, political power is needed to supply the expensive programs needed to aid in the transition to modern social position; this requires leadership. Although the Kenya government has appointed a number of Masai to ministerial positions, these people have not exerted leadership and political mobilization skills among their own people. In the long run, such sociopolitical organization and representation for pastoralists, along with forms of entrepreneurship, will be the essential instrumentalities for economic development.

B. Pastoralist Production and Economics: Academic Controversies

As the knowledge of migratory pastoralism moved from ethnographic studies of tribes and herding groups to appraisals of regional econo-ecological systems affected by development processes, a number of controversies over the nature of pastoralist production made their appearance. Most of these represent ambiguities based on insufficient knowledge of pastoralism as a mode or system. Since most of the issues have been more or less resolved, at least academically, we shall not dwell on them, but summaries are useful since they represent some of the crucial matters in the operation and assessment of development projects.

The first of these controversies, and perhaps the most pervasive, concerns the interplay between individual herd ownership and the communal tenure or use of pastureland. We noted in the section on land tenure that this combination of institutions could result in abuse of resources in the presence of certain conditions. Early development projects often seemed to encourage herd owners to increase the number of animals at the expense of common grazing land and water facilities. This was perceived by some as an example of the "irrationality" of tribal livestock raisers, who lacked knowledge of cause-and-effect relationships between animals and resources. (For a discussion of controversy on the "irrationality" point, see Livingstone 1977.) The overstocking problem was so common in the early projects that the need to persuade pastoralists to reduce their herds became a major objective of development schemes for a decade or so in the 1960s and 1970s. A correlated objective was the effort to increase "offtake," i.e., the number of animals to be sold. Retention of animals in spite of even favorable prices was another related issue, although it has dimensions deserving separate comment, which will be provided later. However, the sequence of issues--increase of herds, reluctance to de-stock the range, and retention of animals in the face of market opportunities--was perceived as evidence of the backwardness or primitiveness of tribal pastoralism. The controversy revolved around the causes of the sequence of seemingly irrational actions, and whether this was due to some defect of the production system or to unfortunate interventions from government and development agencies.

A popular theoretical exegesis of the situation was based on an analogy to Garrett Hardin's (1968) concept of "tragedy of the commons"--an especially appropriate linkage since Hardin's original paper used livestock and grazing land held in common as the prime example of the process of progressive abuse of resources by individuals who might consider that to add one or two additional animals would not perceptibly diminish the forage. However, if every user of the commons did likewise, the impact would be serious, and all would suffer.

However, one problem with the "tragedy of the commons" argument was its apparent assumption (later corrected by Hardin--see Hardin and Baden 1977) that the tendency toward individualized or "creeping abuse" was inherent in human behavior and, hence, not related to institutions and regulatory mechanisms in the socioeconomic system. This critique led anthropologists to defend pastoralists by claiming that the increase in herd size was the direct result of unwise development projects which created new institutions guaranteeing enhanced resources or facilities which then never materialized (e.g., Brokensha et al. 1977, in re the Sahelian pastoralists during the drought; and Swift 1975, concerning Tuareg).

Accumulating understandings have deepened the explanation. The combination of individual herd ownership and communal grazing land is now seen as the root of the problem. This system did appear to operate without substantial or progressive pastureland abuse when pastoralists were free to move over large areas and to work out competitive relationships with one another in their own way, which frequently included raiding and warfare. Cessation of this confrontational regulation through colonial pacification measures removed one important control. At the same time, restriction of movement through closing range areas, drawing political boundaries, or creating block grazing schemes or "group ranches" reduced the availability of adaptive movement to permit removal of competition, or to seek out suitable pasture in periods of regional drought, and so on. These and other checks and balances in the indigenous system made the institutional combination work; when they were removed, the system developed problems. There was no collective responsibility for basic resources.

The response of colonial authorities and the new independence governments to the problems of pastoralists was at times punitive--i.e., to intensify the contradictions; at other times, to attempt to compensate for the resource constraints by promising new inputs and facilities. These promises were broken more often than met; the facilities in some cases--e.g., veterinarian services which stimulated herd size by reducing loss rates--made the situation worse.

In sum, the changing situation tended to increase the uncertainties faced by pastoralists. When entrepreneurial producers--which is basically of what the individual herd-owning system consists--are confronted by increasing uncertainty and risk, they are inclined to respond with self-defensive strategies, which in agriculture means to maximize production in order to extract as much as possible before the system collapses. One proposed solution to the contradiction or dilemma which appears to be gaining favor is individual landownership, which thrusts the burden of conservation on the individual producer, who then has clear incentive to control his production to meet the carrying capacity of his resources. However, this system has other flaws which might even worsen the situation. No one innovation can be assumed to work to change the entire range of factors; there are no simple solutions to such problems. (For a recent appraisal of the issues discussed here, see Hopcraft 1981.)

A second and related issue in the evolution of an understanding of pastoral production concerns the meaning of "subsistence" and "commercial" aspects of the production system. The arguments derive from the anthropological concept of the "cattle complex," popularized by M. Herskovits in the 1920s. This

conception of pastoral production emphasized the subsistence element and defined livestock as both a form of accumulated wealth, to be used for the bride price and other social rituals, as well as supplying milk, blood, hides, and occasionally meat. The raising of livestock in this view was not a commercial enterprise, and pastoralists were considered as autonomous producers operating in their own economic sphere, apart from economic markets and forms of exchange involving money. This view of pastoralism was influenced by anthropological theory of the 1920-30 period, which considered that economics pertained to industrial societies and was characterized by the use of a single, universal medium of exchange--money--and the derived institutions of banking, interest, credit, stock market, and so on. The activities of tribal people were viewed as very different, functioning on the basis of barter, in which economic values were fluid and ultimately based on intangible factors like prestige. Cattle, for example, were valued not for their scarcity or abundance as a commodity, but for the social significance they might have for political or ritual status and purpose. The basic anthropological views have continued into the present as a kind of school centering on the work of Karl Polanyi as presented by George Dalton. (For Polanyi's work, see the symposium, Dalton 1981; for a review of the controversy generated by the work in anthropology, see Schneider 1974.)

Most of the contemporary students of African pastoralism, including anthropologists, take issue with this general conception. Some elements of the "cattle complex" are, of course, factually correct, insofar as livestock can represent intangibles--just as, for example, jewels or a fine automobile can play similar roles in our own industrial economy. But the same commodities in our system can also be considered as articles of exchange with monetary values, to be sold for profit. Likewise, Africa pastoralists can view their animals both as prestige symbols and also as commodities for sale. Moreover, the more exacting research of the contemporary period has determined that pastoralists always sold animals, both to obtain money when they needed it and to thin the herds in periods of emergency, such as natural disasters, which made such thinning a desirable step.

Livestock in African pastoralism, therefore, is a commodity with multiple functions. The animals can be symbols of prestige and status; they can represent accumulated wealth which guarantees this status, as well as conferring political power on their owner; they can be money, insofar as animals can be used in exchange to procure other goods; they can be viewed as capital, insofar as possession of animals confers advantages in other economic activities; and they can be commercial articles for sale on the market for whatever they might bring. It is probably correct to say that the last-named function has become more important as East Africa has moved toward economic development, but this process began a long time ago and is not a sudden consequence of recent development measures.

Before some particular facets of the issue of economic orientation are discussed, a related point should be mentioned. The "cattle complex" conception was, as noted earlier in the paper, an archaistic notion in that it viewed pastoralists as culturally exotic and possessing distinctive cultures differing radically from cultivators and townsmen--or as people who consciously excluded themselves from contacts with the outside world. There were certain elements

of truth in this interpretation, but the extent of contact of pastoralists with other populations was always a variable: some were quite isolated by reason of geographic location (e.g., the herders of northern Kenya); but others, like the Arab pastoralists of the Sudan, were in intimate contact with farmers and townsmen for centuries. In general, pastoralists have represented a cosmopolitan rather than a culturally primitive or exotic population because of their movements and their contacts with people of different cultures, languages, and economic pursuits. This cosmopolitan status familiarized pastoralists with sectors of the pre-colonial, colonial, and post-colonial economies of their regions. Their reluctance to participate in commercial livestock operations is viewed by many modern students as being based more on cultural distaste (e.g., Livingstone 1977) than on ignorance of commercial principles.

Still, the controversies persist. H. Schneider, for example, while recognizing that pastoralist economy is far more than mere subsistence or ritual, nevertheless does not believe that conversion to commercial ranching is consistent with the pastoralist concept of livestock as accumulated wealth and, hence, will mean a "radical" reconstitution of the pastoralist socioeconomy and culture (Schneider 1981). Others disagree, pointing out that pastoralists have always sold animals and, that if the proper marketing and credit facilities are provided, will shift rapidly to commercial regimes (e.g., Hopcraft 1981; Meadows and White 1979).

A third controversy in pastoralist economics, also closely related to the foregoing, concerns the previously mentioned "negative price response" behavior of pastoralists, in which they appear to hold livestock off the market even in periods when prices are favorable for profitable sales. This behavior had been cited by livestock specialists and economists in the 1950s, 1960s, and 1970s as evidence of the "irrationality" or non-market character of pastoral management.

In actuality, the controversy was a double one. (1) The first question was whether pastoralist behavior in this context was indeed "negative," since studies in East and Southern Africa seemed to obtain opposite results: e.g., one by Khalifa and Simpson (1972) in the Sudan, which found that herders sold livestock when prices were favorable and did so on a "short-term" basis, i.e., responded immediately; and a second one by Doran, Low, and Kemp in Swaziland (1979) which found negative responses in the short-term context. Contradictory findings of this type generated the controversy. (2) The second facet of the argument was whether the negative price responses--assuming accuracy of findings--really demonstrated a kind of irrationality or unfamiliarity with appropriate market-oriented economic behavior. This second argument has in a sense already been discussed in this paper, and at least partly discarded. That is, we have assumed that pastoralists, like agrarian producers everywhere, do what is necessary to survive economically on the basis of the conditions they have experienced. Thus, if they do display negative price responses, they are behaving rationally for reasons which can be determined by research and an understanding of their particular economic situation.

The first controversy, which we consider to be the significant one since it is a matter of empirical findings, has been dealt with by Allan Low (1980), who, in the opinion of the writer, has largely disposed of the issue. Low decided to examine studies from North America (e.g., Reutlinger 1966; Martin

and Haack 1977) and Argentina (Jarvis 1974) derived from studies of ranchers' responses to market opportunities. These studies show the same inconsistencies obtained in the African research, i.e., that at times ranchers hold back animals from the market when prices rise, and that at other times they sell immediately. Low then examined the data on herd size and time of response given in the studies and was able to show that the contradictory responses could be explained by the following factors (Low 1980:19):

1) current supply and inventory buildup;

2) short- and long-term response;

3) partial and overall supply data.

That is, unless all these conditions and data were accounted for in research, results were likely to be contradictory or inconclusive: e.g., when cattle are low in supply due to drought or disease, the number available for sale will be small, and the price response may be negative. However, if high prices continue, effort will be made to build up the herds, so, subsequently, price response will be positive. Thus, herd size and time are key variables, and, unless these data are available, the findings are meaningless with respect to some monistic theoretical explanation or interpretation of economic behavior.

In Low's Swazi study, referred to above, the livestock inventory data were included, whereas they were omitted in the Sudan study. The negative responses in the Swazi study are consistent with the North American data indicating negative response, insofar as herd size was small. Moreover, the Swazi response formula was total slaughters divided by the herd inventory, providing a measure of <u>rate</u> of offtake or sales rather than a simple total number for any given year or period. Thus, if the Swazi herders held back in a period of favorable prices, they did so not in violation of the "maximization" rule, but rather to permit an increase of herds so as to realize greater returns at some future date. The Sudan data, which showed a positive short-term response, would thus arguably be in (paradoxical) violation of "maximization" principles, since they could be hampering future profits, and so on. The point is that unless all the variables, and the time dimension, are taken into account, a particular finding of negative or positive price response is meaningless with respect to generalizing about management strategy.

Low's presentation is significant since it shows that African pastoralists probably handle livestock in ways broadly similar to ranchers in the developed agrarian economies. All the North American and the Argentine study calculated inventory and obtained data for longer time periods than was the case in much of the African research and, hence, developed the interpretations seconded by Low. One might qualify Low's conclusions by observing that it is quite possible that since African markets are highly uncertain, and since pastoralists in Africa have been subject to severe constraints from climate and developing economies, land competition, and other factors, their negative responses may be more common than in the developed economies. However, if this is the case, it is simply further evidence that they are behaving "rationally," i.e., inclined to hold on to their one source of wealth and subsistence in the face of an ambiguous future.

Beyond this, the findings of the North American and Argentine ranching studies are quixotically illumined by the pastoralist data. Much has been made, as already noted, of the fact that livestock among pastoralists are a kind of wealth as well as a subsistence resource. Indeed, the wealth element of pastoralism was taken by the "cattle complex" as evidence of the exotic nature of their economies, and some modern students, like H. Schneider, continue to emphasize this factor. However, livestock are clearly a form of wealth for ranchers as well: in Jarvis's study of the Argentine case (1974), he makes note of the wealth factor in his title, and considers the ranchers as "portfolio managers," a function which would appear quite congenial to the African pastoralist.

The present writer considers that the key issue is the existence of a **breeding herd**--as distinct, e.g., from feeder cattler managed by farmers. The existence of a **herd** means **continuity**; this continuity must be protected, whether one is a Montana rancher or a Masai herder. Sales are important, but sales must not jeopardize continuity of the supply. It is the reverse with farmers who raise a few cattle or feed out calves: they consider them solely as commodities for sale. If they need more of the latter, they simply purchase them; if they want to breed, they can borrow a bull; and so on.

IV. POLICIES OF PASTORAL DEVELOPMENT FROM THE COLONIAL ERA TO THE PRESENT

A. Perceptions of Pastoralism

A number of observers of the East African scene attribute some of the difficulties encountered by pastoralist developers to attitudes forged in the elites of the sedentary indigenous societies, combined with Western concepts of the culture and evolutionary status of nomadic societies. One source of the Western concepts has already been discussed: the 1920s' idea of the East African "cattle complex." This conception held that migratory pastoralists lived in a world apart from other producers of agricultural commodities, insofar as they raised livestock for wealth, prestige, and subsistence, rather than for monetary gain. In the course of research associated with development programs, this conception has been greatly modified and largely replaced by a more sophisticated notion of pastoralism as a complex system involving many economic activities and involved in markets and commercial relationships in varying ways and degrees.

Peter Rigby, in a 1969 paper, developed an interesting sidelight on the issue by noting that, up to the time of his writing, the principal conception of pastoralism held by many writers, government officials, and Western livestock specialists related to their "conservatism": meaning their stiff resistance to efforts to modernize their livestock regimes (for an example, see Shorter 1974). In reviewing accounts of pastoralism dating from the 1960s, Rigby noted that these accounts attributed the conservatism to sociocultural phenomena: ". . . it could be generalized that the conservatism attributed to predominantly pastoral societies is thought to derive from intrinsic features of their social systems: their economic and social organization and their systems of value. External factors are recognized as contributing to conservatism, but are assigned a secondary place" (Rigby 1969:43-44). Rigby continues: "These generalizations compete with an equally popular but contradictory one. Lurking behind all but the most sophisticated theories of social change at the macro-historical level is the idea that there is some kind of natural evolution from one kind of economy to another" (ibid.:44).

In other words, Rigby, in this early and prescient paper, perceived that resistance to innovation among pastoralists was attributed to culture or social organization, and this idea in turn was probably based on the nineteenth century evolutionary theory of change, which held that pastoralism was a residue from an earlier, or possibly offshoot, stage of indigenous development, representing a kind of historical fossil: an end-product of one line of the evolution of subsistence systems and not amenable to modification. This theory was elaborated by some anthropologists in different ways, with considerable academic disagreement--e.g., C.D. Forde in 1934 had argued that pastoralism was inherently unstable since pastoralists concentrated on only one mode

of production, which could, therefore, easily make its transition to combined farming-livestock modes (Forde 1934:403). Others reversed the sequence, holding that pastoralism was a late, specialized offshoot of crop agriculture (see Johnson 1973 for a recap of this view). Such arguments took place in the chambers of anthropological academia; they have furnished little enlightenment for those engaged in more practical efforts.

Randall Baker carries the evolutionary ideas down into the present (Baker 1974), attributing them to planners and administrators in the country governments and development agencies: "Initially, early administrators and travellers framed their account of the pastoral peoples in terms of noble-savage imagery thus establishing a trail of false mysticism which bedevils interpretations of pastoral behavior to the present day" (ibid.:3). He continues by noting that the idea is akin to that of the gypsy who lives a romantic, free life, refusing to put down roots in settled civilization. Such romantic images always have a negative counter-image: people who refuse to accept the norms of civilized life can be untrustworthy, thieving, petty criminals. Such attitudes prevented an understanding of the complex land tenure and ecological systems of pastoralists. By the post-World War II period, Baker notes, this historical mystique had changed to the notions of irrational production and resource management and resistance to innovation we have already discussed.

T. Monod developed the criminality theme in his "Introduction" to his 1975 symposium volume. He noted that Europeans were particularly concerned with this, due to their awareness of frequent cattle raiding and tribal feuding by pastoralists. He suggests that these fears may have "psychological origins" in European peasant fears of predatory nomads, as well as more specific and recent experiences by settlers in East Africa. (Perhaps the attitudes may go back to the Middle Ages and the Mongol invasions.)

C.G. Widstrand (1973), in a paper on the Kenya Special Rural Development Program and its involvement with pastoralists, describes still another facet of the interpretations of pastoralism made by sedentary peoples: paternalism. A paternalistic attitude, like the earlier romantic images, is dual: a feeling that pastoral peoples are a special charge, a burden, and that one must do his best for them, coupled with a fear of their unpredictable or childish behavior. This is translated into action in the form of apparently benevolent development programs which limit their mobility but fail to provide supports for the resource deprivation such schemes have usually meant. "Native reserves," "block grazing schemes," and "group ranches" are seen by Widstrand as implementations of a subjectively determined policy to contain pastoralists, remove their dangers, avoid open repression, and seem to help them make an accommodation to modernity without really doing so.

Clare Oxby (1975) provides additional details. She describes the "main arguments" used by governments--colonial and post-colonial--to justify interventions with pastoralists as follows (Oxby 1975:4):

1. to "raise their standard of living";
2. to integrate them into the national society;
3. to make them easier to administer;

4. to prevent them from posing a military threat to their national governments;
5. to make them economically self-sufficient;
6. to make them contribute to the national economy;
7. to make pastoral nomadism a "viable" form of livelihood;
8. to promote better diplomatic relations with the governments administering pastoral nomads.

This list includes just about everything: the paternalism; the economics; the fears and need for containment and pacification; needs for settlement of boundary problems and other political aspects. Pastoralists need to be assisted, but they have responsibilities as members of new nations. The point is that these objectives are not figments; that is, the attitudes and precepts we are describing are not will's-o-the-wisp, but judgments based on historical experiences, and, like all such judgments, they are colored by values and prejudices as well as rationalizations and guilt from the colonial era, or resentment of barbarous tribals on the part of agriculturalists and city elites. The economic-assistance theme received substantial reinforcement from World Bank and USAID sources in the mid-1970s, with their emphases on alleviation of poverty and guarantees of "basic needs." Pastoralists were viewed as poor because they lacked possessions; however, from the point of view of peasant smallholders, pastoralists were the rich, since they possessed a store of capital: animals. If they were indigent in some localities, it was because of development programs, not some intrinsic defect in the mode of production. If they had been dangerous and unruly in the past, or the present, it was because their communal land was being taken from them--itself a nest of misunderstandings, since with communal land tenure no one was supposed to "own" land, and so on. The attitudinal dynamics of the situation closely resemble the attitudes of American settlers and military toward Plains Indians on the American western frontier in the latter half of the nineteenth century, and perhaps these are inevitable formations in frontier situations characterized by marked disparity of economic scales and modes of production.

The ease-of-administration argument set forth by colonial and independence governments is an especially common one and lies beneath, in particular, the elaborate programs followed by Tanzania with regard to the Masai. Generally this argument is spelled out as a matter of providing social services and agricultural inputs to pastoralists, who must undergo sedentarization or at least some intermittent nuclear settlement. Such arguments are based in part on evolutionary dicta: that by sedentarizing pastoralists, one turns them into agriculturalists, from which they pass to the third stage, townsmen or industrial workers. The "villagization" attempts (as they were known in northern Tanzania; other terms elsewhere) were thus viewed as historically necessary and inevitable, not simply as a beneficial exercise designed for some short-term objective. Such conceptions have ignored the fact that pastoralists in the Middle East and Africa have, at least as individuals, made rapid adjustments to manual labor, taxi-driving, oil well-rigging, industrial labor, and so on, without requiring transitional stages of settlement. The arguments also ignore the fact that pastoralists have been throughout history a remarkably

cosmopolitan population, familiar with many modes of livelihood and economic activity.

The responsibility-and-obligation theme must be taken seriously, and not equated with attitudes deriving more from ignorance and prejudice. In this context, the anthropological commentators and the pro-pastoralist spokesmen have not always shown an awareness of the basic imperatives of the nation-state framework. A note of ethnic preservationism has been present in some of the anthropological defenses of migratory pastoralism as a way of life, and this perspective has generated considerable controversy, both within anthropology and between anthropologists and development specialists. Modern nations do require some incorporation of their citizens into productive activities which have some relationship to needs of the whole population: such demands will be made and must be met in some degree. The alternative would seem to be a tribal reserve system in which the ethnic group is kept in a kind of living museum status. However, this is, at best, a transient situation; it cannot last, and in cases where it has been tried--e.g., Brazil--it has resulted in persistent social and political difficulties for everyone concerned.

B. A History of Development Initiatives

Recapitulating the earlier discussion of the historical atmosphere of the colonial era in East Africa: England, Germany, and France competed for domination of the region during the latter half of the nineteenth century, the issue reaching a stage of resolution in the late 1880s and 1890s, with the assignment of Tanganyika to Germany, Kenya to Britain, and Madagascar to France. World War I saw a shift of control in Tanganyika from Germany to England; France remained in control on the island until World War II and the subsequent independence of the territory.

The early German and British policies toward pastoralists were characterized by attempts at "pacification" of the tribes, who were perceived as rebellious and unpredictable. Raiding between pastoralists and depredations of pastoralists on cultivator tribes were viewed as intolerable and as a threat to the ruling powers. The function of these tribal hostilities in maintaining segregation of land use by mode of production suited to particular biomes was not appreciated. These pacification activities were followed by manipulations of land tenure which had the general effect of restricting pasturelands used by pastoralists and rendering their rights of land ambiguous.

British policies with respect to pastoral tribes have been documented by various writers. Representative examples of the part of this literature dealing with Kenya can be summarized. J. Lamphear (1976) has examined the relations of the Turkana to British in the period around 1900, when the various bovine diseases became epidemic, and the tribes resorted to raiding in order to replace depleted herds. The British responded by punitive expeditions which stopped much of the raiding, but also disrupted Turkana movements for pasturage, aggravating their difficulties. British policies with respect to the Masai in the same period are detailed by, among others, R. Waller (1976). As a result of the rinderpest epidemics, many Masai turned to agriculture, both in the southern semi-arid range areas and also in more suitable lands

farmed by Kikuyu and Kamba. The latter movements were based on familiarity with the region due to the Masai custom of permitting their young men to seek farm labor employment among these tribes in the past. However, the farming episode had some aspects of an invasion and was resisted by the agricultural tribes on occasion. As herds increased, the mutual hostilities did likewise, requiring British intervention. The upshot was a curious alliance between the British and the Masai, in which the latter served as a kind of mercenary army, raiding other tribal groups with a history of depredation. These activities served to create an enmity for the Masai which persists today.

E.R. Turton (1972) details the history of Kenya groups of Somali in the period 1893 to the 1960s. By 1919, British punitive expeditions had succeeded in pacifying these people and pushing them into the far northeast region where they would presumably constitute less danger to Turkana and other indigenous Kenya peoples. However, Somali never accepted "pacification" and continued to follow their historical pasturage routes down to and into the period of independence. British attempts at corralling Somali into block grazing schemes were also resisted, and the persistent hostility of the Somali to the British culminated in 1960 in a serious secession movement of these people, echoes of which are still heard in northern Kenya.

Turton remarks, "At no time did the Somali pastoralists present any demands to the government, nor did they even make known any clearly thought out objectives behind their actions. It can be assumed that one goal which all Somali shared was to retain or even increase whatever they possessed: guns, access to wells and water, the use of pasture and the ownership of cattle or camels" (Turton 1976:126).

J. Lonsdale and B. Berman (1979) is an account of the British introduction of entrepreneurial capitalism into Kenya, taking a strong ideological position against British colonialism. According to the authors, pastoralists were the chief victims of British development policies because crop agriculture was favored over livestock production, particularly migratory pastoralism. Since much or most of the prime agricultural land was appropriated to British settlers, and the second-best farmland to Kikuyu, the Masai were barred from developing their own livestock industry or following the course of agricultural evolution. While this indictment of British policies may be factually correct, it tends to oversimplify the complex relations of British and pastoralists and the difficulties in handling migratory pastoralism with European or sedentary conceptions of land tenure.

The evolution of colonial policies toward pastoralists and pastoralism can be sketched, using Kenya (for which the most abundant data exist) as the example.

The pattern of pacification, alienation of pastoral grazing lands, and treatment of migratory pastoralists as savage or barbarous tribes continued down to World War II. During the period, the British engaged in a number of attempts to develop superior grazing facilities and water resources, but most of the measures emphasized conservation and less intensive use of pasturelands which they perceived as undergoing progressive deterioration. Occasionally, there was awareness of the fact that this deterioration was largely caused by

colonial disruption of land use patterns evolved during the nineteenth century by indigenous pastoral and cultivator peoples, but, on the whole, the traditional system was faulted as the cause of the environmental problems. Pastoral livestock was ignored as unsuitable for commercial production and, due to the bovine diseases, was rigorously quarantined so as to shield European cattle from infestation (a policy which had little effect on the whole). This also meant that no attempt was made to develop markets for pastoralist livestock; indeed, in many districts, efforts were made to prevent them from entering sales programs. Pastoralist production was, on the whole, perceived as subsistence-oriented.

The period of World War II marked a change in policy to the extent that the British embarked on a campaign to encourage African agriculturalists, including pastoralists, to intensify commercial food production for war preparation. However, this had little effect in the pastoralist areas due to restrictions on pasture and to lack of interest on the part of pastoralists in commercial sales, since they had no need for the available urban or cultivator-oriented tools and consumer goods.

Continued deterioration of rangeland led the British to inaugurate their first coordinated development program aimed at pastoralism, and the lineal ancestor of all subsequent development plans down into the contemporary period. This was the "Ten Year Plan: 1946-1955," which was based on a resettlement scheme for semi-arid regions of Kenya and Tanganyika. The activities included nearly all of the specific targets of later plans: rinderpest control; locust control; tsetse eradication; borehole development; irrigation; erosion control; reforestation; rural road construction; and some marketing boards and programs. Pastoralist and semi-cultivator groups were moved into new areas to eliminate overuse. The plan conceived of the problems of pastoralism and range areas as essentially those of conservation of physical resources, caused by overpopulation, overconcentration, and overproduction. This basic philosophy (and many of its British expatriate practitioners) guided development projects in East Africa for a long time. The pastoralist population was considered as the vehicle of the problems of deterioration and abuse, and secondarily as a body of people deserving education or assistance in overcoming the disruption of their livelihood induced by colonial intervention.

In the mid-1950s, the Ten Year Plan evolved into a somewhat different approach, based on concepts of resource management and land tenure. It was considered that the pastoralist style of management of communal grazing was inherently defective or non-rational--we have considered the details in an earlier section. In 1954, the Ten Year Plan was supplemented by the Swynnerton Plan which aimed at the introduction of private landownership among pastoralists coupled with encouragement for a shift to cultivation of export crops. Excess pastoralist population was urged to migrate to cities and enter the labor force. Field projects included the earlier types, but also included more emphasis on marketing of livestock and also the first intensive attempts to reduce herd size and control grazing movements by introducing block territories for particular sets of herd owners and tribal sections. Such attempts to limit migratory pasturage were not entirely new, since the British had tried them in northern Kenya earlier in the century, but more in line with pacification or corralling policies rather than as attempts to improve grazing

resources or adjust herd size to carrying capacity. Most of these schemes had dwindled to inconspicuous efforts by 1960, but the period saw the beginning of the second major facet of the contemporary development program: the attempt to tackle the central issue of overstocking and pasture and range management.

While this represented a gain in the sense that attention was finally turning toward the key components of the pastoral system, there was no coherent theory or model of migratory pastoralism as a system, nor of the wider entity: pastoralists in conjunction with other modes of production and occupation on regional scales. Basically, the problem was viewed as one of proper land use, not as a matter of transforming a socionatural system out of adjustment with its physical and socioeconomic environments. Thus, 1960 can be taken as the beginning of the era of frustration among the developers: while they were aware that the key issues or sources of trouble were being addressed, the efforts at change were consistently defeated by resistance from pastoralists, or by their seeming inability to learn the correct routines. We have already described some of the concepts and controversies which accompanied this process of frustrated development.

East Africa suffered a serious drought in the early 1960s, which resulted in a predictable response: a return to conservation themes in assistance and development programs. In 1963, Kenya established a Range Management Division in its Ministry of Agriculture (by 1981, a separate Ministry of Livestock), and this new agency was put in charge of pasture development and range conservation. A few years later a Livestock Marketing Division was created to facilitate the sales programs for surplus animals, particularly in pastoralist groups. This agency was responsible for a still-continuing program involving the sale of pastoralist animals from the northern ranges to farmers in the south who finish them. This program has some advantages insofar as it assists pastoralists in participating in stratified production systems, but, according to some critics (e.g., Mighot-Adholla and Little 1981:147), this policy has hampered accomplishment of a more pressing need to integrate pastoralist and farmer economies in particular regions built on the traditional barter systems.

The effect of drought on attitudes of government officials in both the colonial and the independence periods has been demonstrated by Campbell and Axinn (1980), in the presentation provided in table 5. The discussion accompanying this table echoes the previous observations that the alarm shown by government over the cyclic coincidence of deterioration of range, rise in livestock population, and drought periods is in part a projection of Western conceptions of crisis. The capacity of the indigenous pastoralist populations to cope with at least some of the effects of this three-way convergence is ignored; likewise, the fact that this rhythm has probably characterized the situation in arid and semi-arid, rangeland indigenous herding economies throughout history is replaced with the idea that such conditions are exceptional, hence can be eliminated by rational procedures.

The issue is complex, since there is no doubt that some of the effects of these recurrent "overstocking" episodes associated with drought result from the repeated attempts to do something about them, or are the consequences of contradictory policies, e.g., encouraging livestock production but failing to introduce market mechanisms encouraging voluntary sell-off. Other factors,

TABLE 5

Periods of Drought and Review of Agricultural Development Policy Affecting the Livestock Sector: Kenya, 1930-1980

YEAR	POLICY REVIEW	DROUGHT (YEAR)
1933	Carter Commission	1933-35
1946	African Land Development Programme (ALDEP)	1943-46
1955	Swynnerton Plan	1952-53
1963	Creation of Livestock Marketing Division and Range Management Division within the Ministry of Agriculture	1960-61
1979	Arid and Semiarid Lands Development	1972-76

such as disease, wild game control, and other elements involved in the process, have been noted elsewhere. The steady rise in the human population of Kenya and other Eastern African countries over the past century is another important factor. With the dominant subsistence-herding tradition, pastoralists seek to increase herd size in order to meet human nutritional needs--as well as to participate in varying degrees in the market opportunities opened up by the same process of population increase.

Viewing the situation in these terms, we can recall the point made in the second section of the paper concerning the ecological instability of East African agriculture and resource exploitation, as based on H. Kjekshus's thesis. The relatively stable or at least homeostatic rhythm of the nineteenth-century situation, maintained by many indigenous controls, was destroyed by European intervention in these processes without understanding their interrelationships. Clearly some means has to be found to bring the human population, livestock numbers, and grazing and water resources into a new rhythmic balance. The present mixed and segmental system does not function in the desired manner, and the recurrent "disasters" or concatenations probably should be expected to worsen--even though at least some of these events represent a socionatural cyclicality of long standing in pastoralism and in other components of the indigenous agricultural system.

In 1965, the International Livestock Research Center inaugurated its East African Livestock Survey with the cooperation of the country governments. This provided the first substantial body of comparative information on production, marketing, and other facets. It resulted in new initiatives and agencies and a new awareness of the importance of animal industry--which up to that time had taken a back seat to crop production. Among other things, the survey underlined the need for positive measures to establish pastoralist production on a commercial basis and its possible significance as a source of national income

in the export livestock markets. For Kenya, the major effort was the Group Representatives Act of 1968, which created the grazing-block system, or at least put the institution of pastoralist grazing reserves--an old idea--on a formal legal tenure basis. Pastoralists were enabled to register for tracts of land which would be assigned to them as their "group ranch"--the term by which the institution came to be known. This system was implemented mainly in Masai districts, and comparable developments in Tanzania, although based on somewhat different principles, were established about the same time.

The history of the group ranches is complex, and is mainly a story of failure insofar as the explicit objectives were not met. Restricted pasturage required stock reduction, and quotas were made necessary in order for the herding group to qualify for assistance in the form of veterinary services, borehole drilling, and the like. This led to conflict within the herding groups, with the large herd owners seeking quotas proportionate to their holdings, and urging enforcement of the quota system in order to keep small owners from building up their herds. The big owners simply kept increasing their herds regardless of quotas, in accordance with the principles discussed in a previous part of the paper. The restricted pasturage combined with the persisting system of individual herd ownership resulted in social tension and overgrazing, and no social device emerged or was created to ensure responsibility for controlling herd sizes or pasture use.

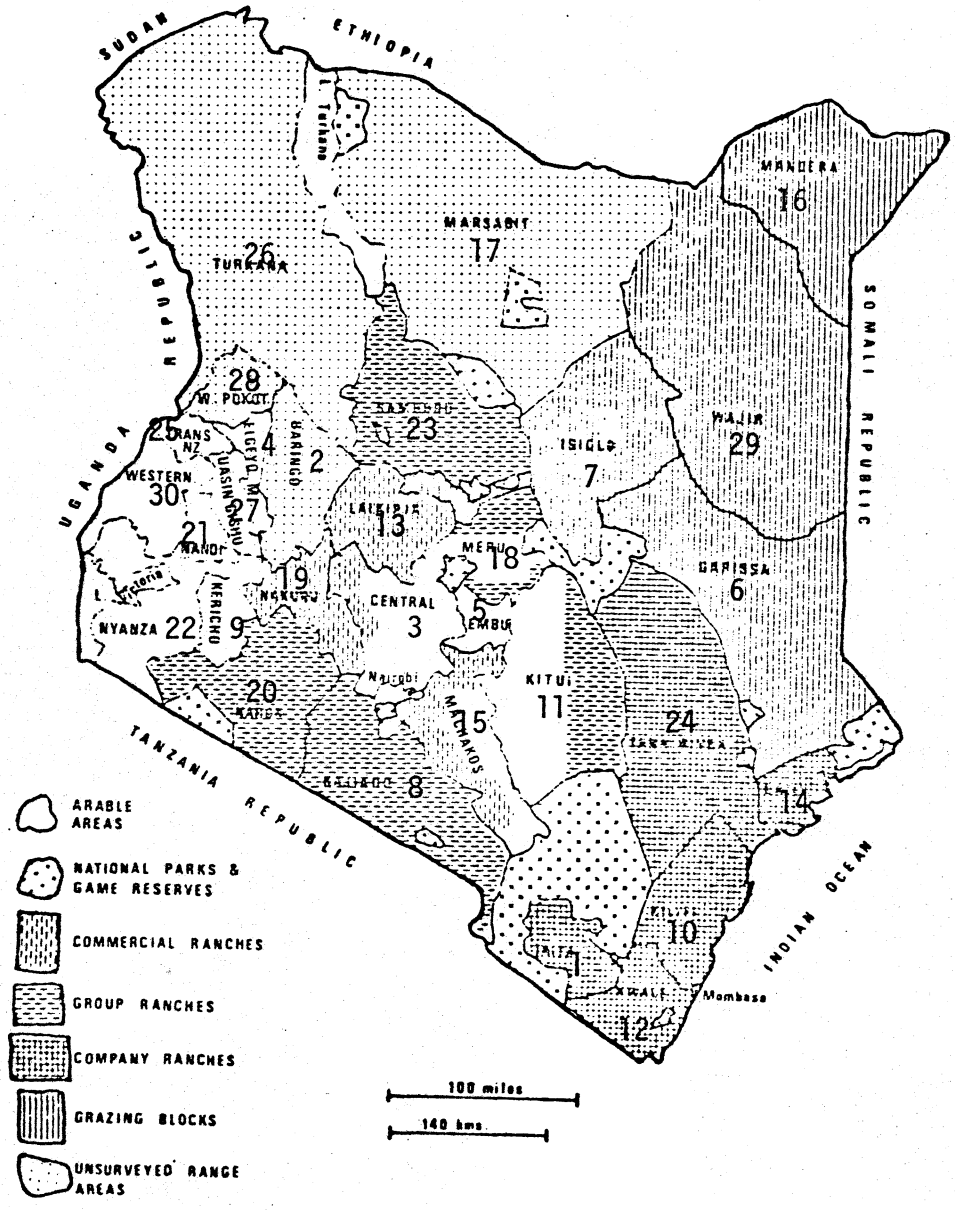
"Supervised Grazing Blocks" were simply a continuation of the old grazing blocks in the northeast introduced by the British many years previously, but now with greater government intervention and control. Grazing fees were charged, a device expected to provide a negative incentive to pastoralists to control stock populations. However, as in the case of the group ranches, pastoralists did not stay within the boundaries of the blocks, and they ignored grazing fees or failed to provide accurate reports on herd sizes. In addition, the pastoralist herds of the northeast are multi-species, and it proved impossible to pasture cattle, camels, sheep, and goats in the same restricted areas. Pasture rotation schemes were worked out for cattle by government supervisors, who had inadequate knowledge for the task.

The disposition of grazing lands in Kenya in terms of land allocation and development projects is shown on the accompanying map, Fig. 3. The Unsurveyed Range, Grazing Blocks, and Group Ranch areas are inhabited by pastoralists. These include the largest amount of territory, and the driest. Parks are small in area, but are sited contiguous with the better pastoralist range areas. The Commercial Ranch and Company Ranch areas are relatively small, but comprise the highest productivity grazing facilities. The two largest areas--Grazing Blocks and Unsurveyed--contain a variety of animal and range development assistance from government. Commercial and Company Ranch areas contain ranching enterprises based on private capital; the difference between them is slight. The commercial type is operated mainly by discharged World War II British soldiers who were given leases by the colonial government. The company type is generally older and is managed by up to 50 shareholders, mostly British, many of whom do not live in Kenya, but including some Africans. Land is also leased from the government.

C.T. Fumagalli (1978) provides a summary of reactions of East African pastoralists to various development schemes introduced by the British and the

FIGURE 3

KENYA RANGE AND RANCH DEVELOPMENT AREAS



(Source: Ayuko 1981)

Note: see guide to district names following page

(Fig. 3: Kenya Range and Ranch cont.)

Temporary Guide to District Names on Figure 3:

1. Aita
2. Baringo
3. Central
4. Elgeyo M
5. Embu
6. Garissa
7. Isiolo
8. Kajiado
9. Kericho
10. Kiltes
11. Kitui
12. Kwale
13. Laikipia
14. Lawu
15. Machakos
16. Mandera
17. Marsabit
18. Meru
19. Nakuru
20. Nanda
21. Nandi
22. Nyanza
23. Samburu
24. Tama River
25. Trans Kz
26. Turkana
27. Uasin Gishu
28. W Pokot
29. Wajir
30. Western

later governments. For the central northern areas of Kenya, populated by Samburu tribespeople, the grazing block systems introduced by the British were more elaborate than those introduced in the later schemes mentioned above, but no more successful. Samburu have a long history of resistance to such schemes, beginning with armed opposition to the British and continuing in the contemporary period in the form of passive resistance or simply ignoring the requirements of the grazing blocks--just as the Masai ignore the boundaries imposed by the group ranches. Eventually, the Samburu voted out all grazing schemes when given the opportunity to do so in the late 1960s.

The problems of various restricted-grazing instrumentalities in pastoralist development will be considered in more detail in a later section. At this time, it is necessary only to report that aside from the many economic and institutional difficulties working against conformity by the herdsmen to the rules was the overriding factor of drought. None of the schemes--early or late--considered the effect of greatly reduced forage production due to moisture deficiencies on grazing and herd health and survival. Nor were marketing facilities created to deal with emergencies of this kind. The onus was thrust on the pastoralists themselves, who were expected to make adjustments involving transformations of production methods followed for generations. Even small

reductions in moisture supply would have the effect of modifying what might seem to be standard and ingrained strategies, like transhumance. Pastoralists show immediate adaptability; but the specialists in charge of development programs lack this familiarity with the environment, and certainly an understanding of the need for rapid adjustment which seems to violate traditional strategies as the specialists may happen to define them. The ecological consequences have been severe: range development projects have often worsened the conditions they were designed to correct (Talbot 1972).

Pastoralists perceive land--pasture, range--as a place to practice transhumant grazing--to raise as many livestock as possible for domestic use and for markets when that is feasible or profitable. They use land for foraging for useful plants, charcoal, honey, occasional wild game. Governments, on the other hand, view land as a multiple-use resource, of significance to the entire nation. Game parks, plantations, farming, commercial livestock production, urban settlement are all potential uses for rangeland--and, particularly, the better range in semi-arid and sub-humid regions. When rangeland formerly used by pastoralists passes into new uses, pastoralists experience increasing difficulty in doing what is necessary to raise the animals they wish to raise and to cope wth recurrent conditions, like drought, which require flexible and mobile responses. Throughout the history of development in pastoralist districts the same problems have recurred: a neglect of consulting the pastoralists themselves; arbitrary modifications of land tenure and use patterns underlying adaptive strategies; inauguration of assistance programs which are neglected or withdrawn at the first sign of trouble. Pastoralists have been low-priority populations; until some means is found to enhance their contribution to the national economies of East African countries, they will continue to lose ground--both figuratively and in reality.

(This historical summary of early development policies is based mainly on the following: Hess 1976; Jahnke 1978; Livingstone 1979; Mighot-Adholla and Little 1981; Nkinyangi 1981. Some detailed accounts of the "group ranch" instrumentality are: Ayuko 1981; Baker 1976; Galaty 1980, 1981; Hopcraft 1981; Jacobs 1975. Although Kenya was selected as the principal case example in the foregoing, more attention will be given Tanzania in sections to come. The following items are useful: Hyden 1980; Ole Saibull 1974; Parkipuny 1975; Rigby 1980. The main issue in the Tanzanian Masai situation is the attempt of the government to promote sedentarization, and this will be more relevant in a later part of the paper dealing with the contemporary development picture.)

C. The Pastoralist Development Process: Historical Model

By way of summary of the preceding sections, and as a prologue to the review of development projects to follow, we introduce the following Chart 1, which diagrams changes in pastoralist production and management from the precolonial or "pre-intervention" stage to the present. This is a highly schematic model, and is not designed to trace historical events in detail. Details have been presented in the preceding sections.

The basic element of the model is the institutional combination of individual herd ownership and "communal" resource tenure. "Communal" is put in

CHART 1

Pastoralist Development: Historical Model

T I M E S C A L E

PRE-COLONIAL — 1910 — COLONIAL ERA — ERA OF INDEPENDENCE AND DEVELOPMENT 1910 - present

B A S I C I N S T I T U T I O N S

This combination has a potential for resource abuse if controls absent.

"COMMUNAL" RESOURCE TENURE —— c h a n g e —— toward mixed systems of resource tenure, requiring restriction of grazing freedom

PRIVATE HERD OWNERSHIP —— no change

PRE-INTERVENTION SYSTEMS OF RESOURCE MANAGEMENT AND PRODUCTION

A) Range management tended to be conservationist because:

Herders agreed to respect mutual needs for resources necessary to maintain a style and volume of production over a given period of time

(facilitated by: e.g., low population density; "natural systems" constraints; reciprocity and redistribution; and others).

B) Production was maintained by the herd-owning household and other primary social organizations, and regulated by collective agreement and mutual constraints, within and between herding units
(facilitated by: e.g., authority systems; styles of negotiation; economic interdependency; participation in pursuits other than livestock production; and others).

C) Human and animal populations relatively static and not affected by factors extraneous to the physical and social constraints.

POST-INTERVENTION SYSTEMS OF RESOURCE MANAGEMENT AND PRODUCTION

A) Range management tends to be abusive because:

Herders no longer maintain or initiate agreements pertaining to resource and production allocation and control, and have restricted choice of pasture.
(facilitated by: population growth; income diversification; technological change; markets; development projects; & alternative land uses).

B) Entrepreneurship emerges: herd ownership, when unrestrained by collective controls, becomes entrepreneurial, i.e., private rather than collective benefits are "maximized"
(facilitated by: breakdown of local and/or hierarchical authority systems; increased reliance on external economic forces and inputs; and others).

C) Human and animal populations fluctuate and change in response to factors extraneous to the physical and social constraints.

quotation marks since, as previously discussed, it is not really that, but a system of usufruct exchange and agreement between herders. However, the term is established in the literature and conveys some sense of the reality. These institutions can function without serious abuse of resources so long as population magnitudes (both animals and humans) remain fairly stable and customary agreements concerning range and water use are in force. If these increase or break down, and if the tenure institutions are modified in the direction of freehold tenure, and/or commercial production schemes are imposed on the herding groups, the consequences tend to move toward the list in the right-hand column.

The dynamics of the system expressed in the model bear some resemblance to the classic "tragedy of the commons" argument noted earlier. However, there are some important qualifications: the combination of "communal" resource tenure and private herd ownership is, according to the "commons" thesis, inherently or logically incompatible. However, the model holds that this incompatibility was not evident in any serious degree prior to European intervention, due to social controls. Thus, the "commons" abuse does not appear automatically, but only in the context of specific institutional changes. Once the controls withered, due to institutional change, and pasture restrictions, the entrepreneurial incentives led to an individualizing of pasture and water use, and hence abuse. In general, then, development and political change led to a "commons" process.

V. APPROACHES TO DEVELOPMENT

A. Programs and Projects

Until the 1950s, most scholars used the term "modernization" to describe the changes in traditional societies stimulated by contact with the Western industrial nations. Anthropologists usually preferred "acculturation," a purely descriptive concept referring to the changes in culture patterns accompanying colonial control of tribal societies. Modernization was conceived as a general social process, not a planned, conscious attempt to introduce change. The changes associated with modernization were also viewed as more or less inevitable, given the spread of Western industrial technology and media of communication and education. The doctrine of progress underlay the concept, since to be "modern" was generally conceived as a good thing (although anthropologists were not so sure). Modernization was assumed to consist mainly of approximations of Western institutions: the nation-state, with its central government, industry, machine technology, bureaucracy, democracy, capitalist enterprise, public education, and its corollary, a high level of awareness of the political process on the part of the general population.

The end of World War II and the liquidation of the colonial empires resulted in a sharpening of the concepts used to describe change in the non-Western world. "Technological change" was in common use by the late 1940s; "modernization" was broken into a series of separate processes referring to the various institutions involved, which were coming to be seen as changing at different rates and speeds. Anthropologists began to speak of "planned change," to distinguish the evolutionary or processual changes from the conscious efforts at speeding up or inducing change in the "modern" direction, which began during the late colonial period and picked up speed in the wartime period, and especially in the 1950s.

By the end of the 1950s, the term "development" came into use as a master concept describing the nature of change in the non-Western societies. However, many of the implicit values associated with "modernization" persisted, giving rise to the term, "underdevelopment." Development was viewed as a good thing and as something the industrial nations owed to the non-Western world in recompense for the long years under colonial domination. Planned change was not, of course, completely new: there are numerous instances in past history, such as Catherine the Great's planned colonization of the southern Volga region by German sectarian settlers as a means of developing the agriculture of the region, or Japan's attempt to reconstruct Hokkaido agriculture in the 1890s on a New England model. In the 1960s, attempts were made to divest the development concept of its implicit value preferences: "underdeveloped nations" was replaced by "developing nations"; and as the former colonies began to participate vigorously in international politics and the United Nations, the term "Third World" came into use (the First World consisted of the Western industrial nations plus Japan; the Second was the countries organized on communist

or Soviet principles). The terms and classifications continue to proliferate; "North" and "South" recently have become popular rubrics.

The main feature of **development** is, of course, the implied emphasis on economic institutions and activities. Efforts have been made to distinguish between economic **development** and economic **growth**, the former referring to economic or socioeconomic changes benefiting the general population; the latter, to any increase in economic output regardless of who may benefit or suffer in the process. The emphasis on economic phenomena generally stems from the conviction that the former colonial countries could compete in the world order only if they shared in the high-output system of economic institutions. If they cannot attain this status, they would be required to submit to the policies of economic control and exploitation characteristic of the colonial and imperialist world system. The left-wing critics of development believe they do, in any case.

Development has itself a theoretical and a practical side: the former consists of propositions relating to just how particular changes take place, or can be induced; e.g., how an increase in **per capita** income can best be effected; or how an increase in agricultural output can be obtained by training or encouraging farmers to "maximize" in particular ways. Much of this theory is econometric, and the incorporation of the obviously influential social-behavioral factors into a theory of development processes has been difficult. The field remains dominated by economic considerations.

The practical side of development is characterized by the concept of "project." The term refers to a particular effort made by planners and implementation teams to accomplish a given end. Such projects are usually short-term; that is, they have a definite life established by the amount of money provided, and the calculated time it should take to accomplish the given end. The term "development program" refers to congeries of projects stretching through a longer period of time. Thus, from 1960 to the time of writing, Kenya has sustained a Livestock and Range Development Program, consisting of dozens of specific projects of varying duration and sponsorship and aimed at different facets of the livestock production process and its resources.

The development project has spawned its own rhetoric and "theory," of which the U.S. Agency for International Development's "Logical Framework" (LF) is an example. This LF conceives of the project task as a series of steps: first comes the overall **Program Goal**; next, the **Project Purposes**; these two define the desired **Outputs** of the effort; and to accomplish this effort it is necessary to supply **Inputs**.

Allied to the LF is the concept of **Professional Core**, which presumably refers to the central set of purposes, inputs, and administration of the project designed to provide certain outputs. This is "professional" in the sense that it is staffed by experts, or "technical aid" personnel with the requisite training in the subject of the project purpose, and also in the theory and techniques of engineering such projects at local levels.

The LF and other related conceptualizations of the "project" reveal some of the basic philosophy of the planned-change-development frame of reference.

First, it is "rational" in the sense that specific outputs are expected to emerge when specific inputs are supplied. Second, the input-output process can be planned or predicted on the basis of defined purposes. This view of the change process is deeply influenced by the conception of human behavior developed in the economics profession and its effort to describe and foster production. Projects planned on the basis of this approach will be production-oriented; that is, their major purpose will be to increase production of some economic good, and the "program goal" will be likewise oriented in this direction. However, in recent years, Program Goals have tended to be defined in terms of social welfare, the satisfaction of "basic needs," or the "alleviation of poverty." Thus, an additional theoretical element is implied: to increase or improve human welfare, it is necessary to increase production.

It should be understood that this conception of causal sequences for change in human societies is not always taken literally by development planners or specialists. It is conceived as a kind of model or starting point, or as a standard against which to measure human effort, much as the "economic man" ideal type was used in early economics. However, whether taken literally or not, the conception has deeply influenced the conduct of development projects and the theory of change.

Critics of this rationalistic conception of the development project undertaking, both within and without the international development agencies, ministries, and research institutes, point to several key issues: first, in the real world, the relationship of "inputs" to "outputs" is complex and devious because of the existence of "intervening variables" deriving from the cultural values, social structure, and political power systems of the society. The influence of such factors is especially strong in Third World countries, most of whom are still in the process of forging a nation-state frame and must struggle with incomplete socialization, vested interests, tribal hostilities, low educational levels, and the like.

A second major criticism concerns the failure of many projects to define the factors of production in terms appropriate to the host country. Development projects are planned in international agencies and in country ministries, whose personnel are often trained in the Western nations administering or funding the projects. Thus, the projects are conceived on the basis of First World country standards or expectations of performance. This, then, results in built-in project failures, since, once the project is under way, things rarely proceed according to plan or prediction due to influence from the many intervening variables. Thus, the project cannot accomplish its defined purposes in the time allotted or funded.

A third criticism of the LF-type conceptions of development projects concerns the high degree of specificity of the projects in relation to the high degree of generality of the socioeconomic systems targeted for change. For example, projects attempt to change specific features of a production system by manipulating only a limited number of factors involved. In the African livestock projects involving pastoralists, the projects' efforts to get the pastoralists to alter their methods of producing and selling animals usually concern the livestock sector of the pastoralist economy alone. However, the raising, using, and marketing of livestock among pastoralists is

influenced by pastoralist participation in other economic sectors: their own partial involvement in crop farming; symbiotic relationships with farmers; trade and transportation; the value of the local currency; agreements and social reciprocities with other pastoralists; and so on. Few projects have attempted to deal with the whole system of pastoral production simply because it is too complex. Yet projects are considered to "fail" because the whole system is not implicated in the program or project plan.

A fourth criticism concerns the difficulty of defining precisely which factor of production constitutes the basic resource that needs improvement, conservation, or management. This is particularly difficult in a system like half-subsistence/half-commercial pastoral livestock production, where all factors are transformable into different categories depending on one's point of view. Many, if not most, East African livestock projects considered livestock to be the primary resource to be improved or enhanced; this focus on livestock may have been one of the causes of the persistent overstocking and overgrazing accompanying some or most of these projects. On the other hand, in the colonial years, the British considered forage plants or grazing facilities as the primary resource, and focused their efforts on these through most of the period of the Protectorate. This approach, while perhaps appropriate in the long run, proved equally futile or even destructive since, during periods of enforced fallow, the pastoralists simply overgrazed other areas or ignored the conservation regulations since they felt that the British had little comprehension of the complex nature of indigenous strategies of pasture use, which often involved cyclical overuse and recovery, facilitated by herd mobility. However, it should be reaffirmed that, in general, to consider forage or grass as the primary resource which should be managed before livestock numbers are modified is a more appropriate long-term strategy than to focus exclusively on the animal component in the hope that somehow pasture will be managed.

A fifth criticism--and one that will be developed at some length in the section of this monograph dealing with pastoralist development projects--is the tendency to conceive of development as mediated by official organizations. The difficulties of gaining access to pastoralist migratory tribal communities and working intensively with them led to a style of project in which a large proportion of the allocated funds was devoted to establishing a government-operated or parastatal board or organization charged with the responsibility of introducing the changes to the indigenous population. Thus, much of the money went to pay salaries of project personnel, many of whom considered the situation as one of opportunity for professional positions. Thus, funds for material inputs like roads, breeding of animals, agricultural extension, training of field workers, and so on, were often in short supply, yet it was these sectors which needed attention. Moreover, since the organizations were charged with responsibility for "success" of the projects, any failure of goal achievement was often attributed to the indigenous population, who were viewed as having opposed or defeated the purposes of the project (Galaty 1980b).

This brief summary of vectors of criticism may leave the impression that developers have a monopoly on ignorance or even stupidity. This view is taken only if one assumes that development projects could be operated more successfully but still remain within the present economistic frame of reference. The

deficiencies arise basically from the structure of the foreign-aid aspect of the international development institution: the rationalistic, limited-purpose project frame is an outgrowth of this peculiar effort, and its logical simplicities were necessitated by this effort. That is, economistic philosophy was brought to bear on the project because this was the only approach which could be accommodated in the situation. The short time span, created by the method of funding through appropriations, etc.; the need to involve the country governments and their limited conceptions of the change process; the limitations of overseas service for project personnel; the need to maintain discipline and authority channels in the development agencies; and many other factors made the "project" and the "professional core" mode of operation inevitable.

(This summary contains themes which will reappear in the discussions of country projects to follow. The sources include project evaluations to be cited later; and, in addition, the following more general statements: Hirschman 1967; Tendler 1975; Long 1977; Robinson 1979.)

B. Pastoralist Development in the Context of Arid Land Management

The preceding discussion suggested that, in the long run, an environmental focus on pastoralist development might avoid some of the destructive consequences of projects we shall review later. One cavil: some critics of pastoralist development programs make the point that the welfare of the pastoralist population itself is not the focus of development effort, but should be (e.g., Aronson 1981; Hoben 1979:10). That is, so long as livestock is the major concern, ignorance of the distinctive strategies of pastoralist land and animal management will persist, and their livelihoods deteriorate. This is undoubtedly correct. However, the suggestion that grazing resources should be a prime resource target <u>includes</u> the "people" emphasis insofar as the management of pasturelands by indigenous pastoralists is assumed to be the starting point of any attempt to increase their productivity in any fashion (not necessarily increased commercial beef output).

This approach should be based on respect for the knowledge possessed by pastoralists in the sustained-yield use of arid and semi-arid lands. Dryland resource management and development is a new topic in the Western countries, where agriculture is largely a story of success in the exploitation of temperate, humid environments. Documents on arid land resource management published in the United States, for example, generally begin and end with disclaimers concerning Western knowledge of these environments: e.g., "Dealing with arid lands issues is made the more difficult because of a lack of specific focus upon arid lands in public policy and the lack of sufficient arid lands policy research" (Ingram et al. 1981:28). While knowledge of the distinctive or peculiar problems of arid lands development is in short supply in the United States, USAID and the World Bank have not hesitated to evolve elaborate strategies of development for these lands overseas.

The variability and uncertainty of production in arid lands, plus the low carrying capacity, mean that the monetary returns are generally low per capita. So long as agriculture is considered to be the economic mainstay, this condition is subject to little change. The low returns emanating from arid lands

is a problem of constant concern for country governments plagued by debts and the need for foreign exchange; there exists a constant incentive to explore means to make these lands more remunerative. Conversely, such governments are reluctant to commit large amounts of their own funds to development programs in dryland areas; this accounts for the high proportion of foreign funding of pastoralist projects as compared with cropping development schemes. For Tanzania, approximately 95 percent of all funds expended on the northern Masai development projects were derived from international agency grants and loans; the percentage for Kenya is lower since Kenya is generally a wealthier country (author's calculations based on data in agency mission offices).

The fact that indigenous populations, past and present, had evolved efficient strategies--granted modest output--for using arid lands has been known for a long time, and the experiments in Israel based on Bronze and Iron Age methods of desert use are commonly cited (Evenari et al. 1961). Still, projects involving almost none of these unique methods have been funded; for example, in the Middle East, the remarkably efficient quanat system of desert water management is largely ignored in favor of borehole drilling, just as the carefully calibrated herd movements and use of existing water supplies are ignored in Africa in favor of the same technique--a technique which has had abusive effects on water tables, concentration of stock around water supplies and consequent overgrazing, and the like. (As already noted, the officials of many African and Mid-Eastern governments, trained in the Western techniques of land use, have demonstrated similar incomprehension.)

The first consideration is the inherent variability of dryland regions. The shortage of precipitation is a general characteristic, but even more important is the chronic variation in moisture supply by locality and the attendant difficulty in predicting a stable production output. Arid lands inhabitants adjust to this variability with a variety of strategies, some of which have been described in earlier sections of the paper. Dryland environments provide random sequences of "good" and "bad" years or brackets of years; ways must be found to prepare in good years for the coming bad ones. Overall increases in productivity have to be qualified by strategies which permit "coasting" during moisture-short periods in order to guard against resource abuse. This is as important for graziers as it is for crop raisers.

Variability of plant cover is as marked as moisture variation. The basic strategic significance of migratory movements is to permit utilization of pasture forage where it is available, in differing quantities, and at different times. Since the plant cover of arid lands includes a variety of species of grasses, forbs, shrubs, and trees, the multiple-species tendency of most pastoralist livestock regimes permits the use of these varied plants by different animals with differing nutritional requirements and habits. This strategy is equivalent to crop diversification among farmers and should be viewed as essentially rational.

In the First World, arid lands management has gradually come to be viewed as a problem of government control and funding since the geographical extent of the resources requiring management exceeds the capacity of smaller units of government to cope. The low or fluctuating productivity of these regions does not generate sufficient revenue to permit significant investment; in Africa,

responsible local government in such regions often does not even exist. The distinctive strategies of management of indigenous populations have evolved as low-cost, labor-intensive, environmentally conservative, low-energy utilization systems, and these go by the board when governments intervene on a large scale with high-energy technology and bureaucratic controls. Fortunately, the persistent failures of development programs have forced a new respect for the indigenous patterns; some countries, like Botswana, for example, are learning to live with the situation and to scale down their national expectations to more reasonable levels and, at the same time, protect fragile resources.

The fragility of arid land resources is an issue which has surfaced repeatedly in the past decade, often under the rubric of "desertification." The term is misleading since it was originally coined by French Saharan specialists to describe the apparent southward creep of desert dunes and the accompanying loss of vegetation due mainly to human activities. Eventually, it came to be applied to many other phenomena: heavy grazing pressure on grasslands; blowing dust around arid lands urban settlements; salinization and siltation associated with irrigation; and so on. In the context of this paper, it is mainly a problem of grazing pressure, and this remains a topic not fully understood by many development specialists. The effects of different grazing practices, through varying periods of time, on grasses and other plants in rangelands are still under investigation and experimentation on all continents. Whether a presumably general process like "desertification" can be implicated is also a matter for continued research and thought.

It is true, of course, that methods may be found to make arid lands yield greater returns at minimal environmental and human costs. Better use of available labor for the construction of waterworks, encouragement of diverse local variations in production, experiments in flexibility of land tenure arrangements (particularly necessary in African dryland countries like the Sudan and Tanzania which nationalized all agricultural land), and choice of appropriate styles of technology are all necessary accommodations. The strategies and techniques followed by the indigenous populations are an important source of such methods, but undoubtedly some can come from experiments conducted by scientists and engineers in the innovative research institutes in the West.

Much profit lies in reviewing pastoralist development as a combined environmental and cultural problem; we might call this the **socionatural system** approach. Program goals should not determine project purposes; project purposes should be formulated with reference to human and resource possibilities, and these should **then** determine program goals: bottom-up, not top-down. Arid lands development lacks the flexibility and margin of safety found in resource-rich regions; it cannot be sustained with an arbitrary theory of development determined solely by human desires or objectives, and especially those imposed from the outside by people imbued with goals derived from alien environments and economies.

International development agencies for the past decade have emphasized the need for "participation by local people" in the operation of development projects. Rarely, however, are the local people consulted at the planning stage. Nevertheless, the exhortation is a useful one, and something to build on. The pastoralist case is perhaps the most cogent of all; the failures of

development specialists to comprehend the complexities of pastoralist resource management--or their refusal to act on what knowledge they may have because of the low returns obtained from these economies--demands a more participative approach. Education and training of pastoralists in all features of their own operations, as well as in appropriate technology and other innovative features, should be the order of the day.

(The following items are a representative selection of classic books and papers on arid/semi-arid land management of particular concern to the grazing and pastoralist problems: Clark 1956; Hodge and Duisberg 1963; Hyder 1969; Dregne 1970; R. Peterson 1970; Box 1971; Mabbutt 1976; Glantz 1977; Box and Peterson 1978.)

C. Foreword to Country Programs Review

The remainder of the paper is devoted to a review of the livestock development projects in Eastern Africa funded principally by USAID and the World Bank group, with contributions from other national and international agencies. This review is based on a series of papers representing the final plans and budgets of the projects involved in each program, plus, where available, evaluative studies of the success and failure of these projects and programs. At the close of the country reviews, the general pattern of development planning and implementation followed by the agencies will be discussed with reference to a number of scholarly critiques, some of which were already discussed in previous sections.

The style of this review of project literature available for study may be described as interpretive journalism. That is, we shall present summaries and paraphrases of the documents themselves in order to convey a faithful impression of their contents. We believe this has been done with care and balance, although inevitably some of the biases of the approaches already developed in this paper will show through. Comments and evaluations by the author will be inserted from time to time where appropriate. In certain sections it may be difficult to distinguish between criticisms made by the project evaluation teams and similar criticisms made by the author of the paper. We have tried to clarify the context whenever necessary.

Since the review is limited to the project documents made available, and since this means that most project documentation is incomplete, it is necessary to point out that some of the criticisms (both those by the evaluation teams and those by this author) may be voided by developments occurring subsequent to the date of the project document. The terminal date of documentation for the entire paper is, as noted in the foreword, fall 1981. Most project papers date from the 1970s or very early 1980s.

The review will concern four countries, in this order: Somalia; Kenya; Tanzania; Ethiopia.

If there is a major theme in this review, it is that the style of development used in Eastern Africa for livestock development is based mainly on the theory that by creating state agencies, or semi-autonomous bureaucratic organizations, facilities for production will automatically provide adequate

incentives for the pastoralist producers to increase and improve their production. This approach to development has not apparently provided the incentives; and, in addition, the activities assigned these organizations have tended to disrupt the traditional and relatively effective modes of production without supplementing them with more effective strategies. Few of the evaluative reports assess this crucial issue; their criticisms pertain to more specific failings. At the same time, certain features of the development programs have possibly provided infrastructure which may permit a more adequate regime in the future. The professional method of evaluation of development programs makes it difficult to discern these possible contributions or successes, while at the same time criticizing efforts for an unrealism which is more easily understood as part of the necessary enthusiasm associated with the building of new institutions in new nations.

The reader also should be notified that some of the more penetrating or relevant critiques of the livestock projects and the development process generally will be found in context in these reviews of country project documents, and not in the preceding introductory sections on development processes, nor in the summary sections to follow the country reviews.

VI. ORGANIZATIONS FOR LIVESTOCK DEVELOPMENT IN SOMALIA

A. Introduction

This review is based on three documents supplied the author and designated in the bibliography as: (1) IBRD-IDA 1974A, the World Bank (WB) "Appraisal" paper of the Trans-Juba Livestock Development Project; (2) World Bank 1979, which is an appraisal paper for the Somalia Central Rangelands Development Project; and (3) USAID PP 1979, a U.S. Agency for International Development "project paper" (document similar in function to the WB "appraisal"), for the same Central Rangelands Project. Note that all three docments are pre-project statements; no in-project or terminal evaluation documents were furnished the author. Since both of these large-scale projects (each is really a "program" of projects in itself) were late getting under way, and one, the Rangelands Project, is only a year or so old at the time of writing, it is still early for evaluations.

This review of the Somalia livestock development program will be brief, since, as noted in the "Foreword," it was not possible to do fieldwork in the country or visit development agency mission offices there. We are dependent entirely on these three papers plus bits of information garnered through the usual professional contacts and general reading.

Both of the projects reviewed here were directed toward the improvement of livestock production among the pastoralist population, which constitutes 70 percent of the total population of Somalia. However, the principal beneficiaries of project operations, at least in terms of activities and funds expended to date, are two Somalian government organizations: the National Range Agency (NRA), and the Livestock Development Agency (LDA). That is, the projects are primarily institution-building ventures, designed in part to provide structures for distributing future benefits to the producers.

B. Background Information

Somalia is a part of Eastern Africa, but not historically part of East Africa. A little-known refuge for mainly pastoralist tribal people before World War II, it emerged on the international stage as a result of conflicts with Ethiopia, and internal revolution. Nearly half of the country is rangeland with a fluctuating and geographically variable precipitation of 50 to 200 mm annually. Seventy percent of the population consists of village settlements, their populations practicing transhumant grazing plus crop-raising. With the current political difficulties in the Horn region, many Somalian herding peoples have become refugees in northern Kenya, where relief and development projects are under way, supported by international agencies. In the late 1970s, when these livestock development projects began, Somalia was one of the poorest countries in Africa, with a per capita GNP of about US$110. However,

poverty is not easily measured by GNP or income data among pastoralist peoples. More important is the fact that due to the usual causes--deteriorating rangeland, increasing population, political unrest, and other factors--many pastoralist groups have found it increasingly difficult to operate even as subsistence herders.

It would appear that development of the livestock industry is, therefore, a matter of high priority for Somalia, more so than for East African countries and their more diversified agricultural and light industrial sectors. These facts help to explain the distinctive character of the projects reviewed, i.e., the strong emphasis on creating governmental organizations and agencies which could act as patrons for the principal national source of wealth. In the 1960s and 1970s, livestock exports from Somalia were increasing rapidly. In the period 1974-76, livestock furnished about 80 percent of all foreign exchange earnings. Of the animals exported, 57 percent were sheep, 38 percent goats, while cattle and camels accounted for only 3 percent and 2 percent, respectively. One of the main objectives of the development programs was to increase the number of quality beef cattle for export.

C. Problems in Pastoralist Production

The mechanisms of change described elsewhere in this paper also affect the Somalian pastoralist system. Prior to the beginnings of modernization of the economy and the land tenure system, pastoralists adapted to drought by permitting herds to contract and expand through slaughtering and uncontrolled breeding and by transferring animals through migration from one part of the range to another. Constraints on movement, plus encouragement of production and the introduction of veterinary services, resulted in herd growth and consequent range deterioration. This established the need for control of the animal population and for intensive management of the range flora and water resources. Under the present conditions, drought has a growing impact; each period of rainfall contraction leaves the herds, the range, and the human population in worse condition. Considering the dependence of Somalia on its range and livestock resources, it is essential that a new socionatural system be established; simple conservationism is an inadequate response, since it does not deal effectively with human use strategies.

The projects reviewed cast the measures in the context of development, insofar as the overall objective is to stabilize and improve resources in order to increase the output of quality animals and, by so doing, supposedly to improve the economic position of the pastoralist population. As with other livestock projects in Africa, resource control and enhancement is viewed as a bureaucratic activity requiring government intervention. It also tends to be viewed in the context of crisis philosophy: something must be done rapidly in order to avert an anticipated catastrophe.

D. The Trans-Juba Project

This project enjoyed the first World Bank financing for agricultural development in Somalia. Previously, the WB had provided six credits to the country, totaling about US$35 million, to finance roads, port development, and education. Progress on these projects was considered to be satisfactory in

1975. The Trans-Juba Project was funded at US$11.5 million, 64 percent of which was for foreign exchange requirements for Somalia shillings. The IDA credit of US$10 million financed 87 percent of the project cost. Somalia government contributions amounted to US$1.5 million, or 13 percent of the cost.

> iii. The Project would over five years include construction of five cattle markets and improvement of over 1,000 km of existing stockroutes. It would establish two grazing ranches of 80,000 ha each, as well as an irrigated fodder farm and feedlot. Provision would be made for a disease control program, technical services, training and future project preparation. The Livestock Development Agency (LDA) would be responsible for the Project's execution, except for the disease control program and feasibility studies for future agricultural projects which would be the responsibility of Government. The LDA would engage in Livestock trading, improve and manage stockroutes and holding grounds for the better marketing of livestock; and carry out a large scale cattle fattening operation based on irrigated fodder production. . . .
>
> vii. The estimated financial rate of return to LDA would be 14%. The rate of return to the Somalia economy would be about 25%. At full development in year six total annual marketed production through the Project would be about 52,000 head of cattle: 25,000 fattened, 19,000 canners, and 8,000 for live export. At full development incremental carcass weight resulting from the Project would be about 3,900 tons annually and incremental exports of live cattle, chilled, frozen, and canned beef would amount to US$6.6 million annually, representing net foreign exchange earnings of about US$3.8 million.
>
> viii. About 20,000 nomadic cattle-raising families owning about one million cattle (1/3 of total Somalia cattle) would benefit from the Project. Estimated annual cash income per family would increase on average by about 50%, from So.Sh.600 (US$100) to So.Sh.900 (US$150). The Project would provide permanent employment for 600-700 persons within LDA, and an additional 200 would be employed for five years in Project related construction [IBRD-IDA 1974A:i-ii].

Although this quoted paragraph identifies the major beneficiaries as pastoralists, the real, or at least primary beneficiary was to be a Somalian government body: the Livestock Development Agency. This organization was established in 1966 as a government-funded autonomous agency, with its own right to engage in economic enterprise and charged with the responsibility of developing the livestock industry and marketing its products. The LDA had considerable difficulty establishing its control over the industry and financing its operations (as detailed in IBRD-IDA 1974A:1-5, Annex 3). Some of its projects, like an ambitious poultry production farm operated by the agency, cattle and sheep breeding stations, an attempt to obtain a monopoly on drugs used in livestock health control, and other ventures, either failed or remained in an experimental or unprofitable state by the mid-1970s.

In 1969, the agency was engaged mainly in livestock export and the supply of slaughter cattle to the Kismayu Meat Factory. This operation resulted in a

financial disaster, since the factory was able to process only less than half of the number of animals required to pay expenses, taxes, and debts. This took place simultaneously with the early-1970s' African drought, which caused weight losses in the animals, especially in the holding pens, so many animals could not be processed or sold. Severe financial losses resulted. However, by 1972, the drought lifted, and the factory was in better condition to handle its quota. The agency began recovering from its losses, which were running around US$80,000 per year.

Despite this partial recovery, other abortive projects, and a persistent mismanagement problem, left the LDA in shaky condition. The WB paper states that:

> LDA particularly suffers from a shortage of qualified and experienced staff in the accounts section. LDC's records have been kept basically on a cash receipts and payments basis . . . . Some form of distinction was made between capital and revenue expenditures in the early stages and in 1967 and 1968 attempts were made at preparing balance sheets showing the assets and liabilities of the agency; these efforts were later abandoned . . . . The inadequacies of LDA's accounts staff resulted in a lack of accurate records and of any form of management information. Furthermore, inconsistent allocations of expenses make a meaningful comparison of the Income Statements and the results of different activities for the years 1966-1972 extremely time consuming and to a large degree misleading. Moreover, LDA does not have an internal audit section . . . [IBRD-IDA 1972A, Annex 3, p. 3].

Not all of the problems of the LDA were its own fault. The government hampered its operations in many respects, requiring it to carry on activities, but then taking a disproportionate amount of the proceeds, and, at the same time, denying it advantages in the form of relaxation of taxes and duties. Hence: "LDA's organization and management would, however, be substantially improved under the proposed Project" (IBRD-IDA 1972A, Annex 3, p. 5).

Since the project's goals were mainly concerned with feeding (fattening cattle for export) and marketing the animals and the processed meat, the project was essentially a matter of improving the operations of the LDA and the meat factory and putting them on a firmer footing. The World Bank document used here is mainly a financial and production analysis of the operations of the LDA; the producers are mentioned just once, in the early passage quoted previously. "Total LDA and Government Operations" expenditures consisted of 97 percent of all expenditures, or US$9.287 million out of the $11 million grant. Within this amount, about $452,000 was allocated for "Development and Training Unit," as the sole allocated increment for activities other than production. (See "Project Costs," Allocation Table, IBRD-IDA 1972A, Annex 3, p. 17.)

The marketing structure for livestock in Somalia reflects a traditional reliance on a class of town-based merchants, and a similar group across the border in Kenya. The Kenya trade is based on seasonal pastoralist migrations from dry areas in Somalia to better pasturage in Kenya. Kenya merchants

supply valued consumer goods to the Somali herders, as well as the higher Kenya shilling prices--considerably higher than those obtainable in Somalia during the 1970s. This Kenya trade siphoned up to half of the animals out of the Somalia market, creating a chronic market uncertainty the project was designed to alleviate. Roads, holding areas, feeding stations, pricing mechanisms, and other facilities supported by the project were designed to cope with this situation. However, the project paper did not analyze advantages or disadvantages to the pastoralists of the traditional marketing system; the concern was for production alone. We shall return to this issue in the next section.

Summarizing: This initial livestock development program for Somalia concerned itself entirely with economic, organizational, and technological structure designed to facilitate production and marketing. No analysis of pastoralist production methods, or the effects on people and their herds of these measures was made. The project appraisal paper stands as an example of a typical early livestock project for Eastern Africa, the type that in subsequent years created severe dislocations among pastoralists and their production system.

E. The Central Rangelands Development Program

This was the second of the two Somalian projects examined, and, like the first, was concerned mainly with a government organization, the National Range Agency (NRA), and the economic, technological, and production activities administered by this agency. A fuller discussion of the issues surrounding this type of development assistance will be presented in this section.

The program was concerned with the development and management of the 149 sq km of the Central Rangelands region of Somalia, comprising about 25 percent of the total land area of the country, and the portion subject to the most severe droughts. In the drought of 1973-74, herd losses were as high as 50 percent. Many pastoralist families went on relief; others migrated permanently to Kenya (Wisner 1975); and an unknown but substantial number died.

The Rangelands Program was designed to operate over a period of six years, hardly enough time to make a start on the problems, but of course, with expectations of continuing indefinitely as a long-term program, since most of the projects were concerned with building functioning departments.

To quote the USAID description:

> The project would . . . consolidate and improve rangeland and livestock production in the project area, increase the income of the pastoralists through the introduction of a system of range utilization, and make way for the gradual concentration of pastoral communities, which would help in the provision of social services. This would be achieved by conducting an aerial survey of the rangelands, including livestock and human habitation, and the preparation of a vegetation map. This would be followed by a ground survey of the rangelands and the pastoral communities. This survey would form the basis for the establishment of grazing reserves and

> selection of those reserves where stockwater supplies would be developed. The veterinary services would be expanded, non-formal and formal education would be provided. The National Range Agency's administration would be strengthened and nurseries, town shelter belts, and water and soil conservation activities would be initiated. Specifically, the project would provide staff, equipment, housing, and transport . . . (USAID PP 1979, pp. 3-4).

The total funding for the program is given as US$45.30 million for the USAID version; US$46.30 million, in the World Bank version. USAID supplies US$15 million, and IDA, US$8 million. The balance is provided by a consortium of other international development agencies; the Somalian government contribution is only US$5 million, for local salaries. The IDA and IFAD contributions of US$8 and US$7 million are in the form of World Bank credits and Special Drawing Rights, respectively, to be given to the Somalian government, which will then invest and pass on the proceeds at regular intervals to the National Range Agency. Allocation of funds is presented in table 6.

The National Range Agency--the organization receiving and administering the funds--was established in 1969 under Somalian laws controlling conservation of game, wildlife, and forests. As in other countries, range management was conceived originally as a **conservation** issue, rather than as development. This has both favorable and unfavorable implications: favorable for the range; often unfavorable for pastoralists, whose cyclical strategies for forage use are often misunderstood by the specialists trained in conservation science. The NRA is headed by a General Manager who reports to the Minister of Livestock, Forestry, and Range. The office is divided into departments for range, environment, forestry, wildlife, and various administrative and research units. Range officers, each with several assistants who act as conservation and extension agents, are appointed for the various regions.

The NRA has considerable powers. It can open and close grazing reserves, establish grazing associations, control stock water facilities, seize and arrest individuals for offenses, and undertake research. The extent of its powers resemble those assigned to the game wardens in East African parks, and this may reflect the deep anxiety which Somalian leaders have felt in the face of persistent range deterioration. The NRA powers also have significance in the light of the emphasis on persuasive compulsion on pastoralists to conform, exerted by some of the projects in the Rangelands Program (to be noted later). The most important department in the NRA, from the standpoint of pastoralists and pastoralist development, is the Department of Range and Environment. This contains divisions which plan, implement, and enforce various programs of land, plant, and water conservation, plan and direct the formation of grazing associations, monitor the activities of grazing cooperatives, and establish experimental co-ops with different functions. Agents of this department are essentially range police.

During the four or five years following the inauguration of the Trans-Juba Program, many of the difficulties with pastoralist production we have described for other countries made their appearance in Somalia. This accounts for the attention paid to the pastoralist activities and social organization in the World Bank and USAID papers for the Rangelands Program. In contrast to the

TABLE 6

Allocation of Rangelands Development Program Funds

CATEGORY	IDA	IFAD	USAID	ODM	WFP	GOVT	TOTAL CAT COST
			(US$ million)				
Construction	2.84	3.19	1.5	--	--	--	7.53
Vehicles and machinery	0.80	0.90	1.7	0.49	--	--	3.89
Equipment and furniture	0.44	0.49	1.62	0.28	--	--	2.83
Professional services and fellowships	1.04	1.18	0.40	0.04	--	--	2.66
Technical assistance staff	1.10	1.24	6.01	2.58	--	--	10.93
Local salaries/allowances	0.38	0.43	--	--	--	5.00	5.81
Vehicles and machinery operation	0.88	0.99	1.94	--	--	--	3.81
Maintenance and utilities	0.40	0.45	1.35	--	--	--	2.20
Food rations (WFP)	--	--	--	--	4.30	--	4.30
Miscellaneous operating costs	0.12	0.13	0.48	0.51	--	--	1.34
Total contribution =	8.00	9.00	15.00	4.00	4.30	5.00	45.30
% of total project cost	18%	20%	33%	9%	9%	11%	100%
Foreign exchange contribution =	5.43	6.10	13.40	3.80	3.87	0.14	32.74
% of total contribution	68%	68%	89%	95%	90%	3%	72%
% of total foreign exchange costs	16%	19%	41%	12%	12%	--	100%

SOURCE: USAID PP 1979, p. 22.

virtually total neglect of the producer sector in the Trans-Juba project documentation, the Rangelands USAID Project Paper provides about 15 pages (out of a total of about 70 textual pages) of description of pastoralist production and its organization. The material presented reflects a sophisticated view of the system, and it is clear that qualified anthropological consultants were called upon for assistance.

Among the materials presented, the most important concern the institutions of grazing association and grazing cooperative. The cooperatives were started

in 1974 under the sponsorship of the Ministry of Livestock, Forestry, and Range, as a preferred method of adjusting pastoral land tenure to modern conditions and grazing restrictions. These cooperatives have had the usual problems of group-production organizations in Africa: the size of the grazing areas assigned to the co-ops rarely meet the needs of the herds and herders in periods of drought, when flexibility of movement is necessary. The expansion and contraction of the herds in relation to the drought cycles have not been modified in the direction of stable intensified production. Many of the projects undertaken in the Rangelands Program were designed to do that, i.e., to provide special grazing reserves, watering, roads, and other facilities which might provide backup resources and cushions in periods of special need.

Grazing cooperatives in Somalia were about 12 in number in 1980, most of them in the north, on superior grazing land, Each family in the co-ops had access to more than 300 ha of range per family unit. The cooperatives also retained the right to graze common rangeland in drought emergencies. The development of the co-op system by 1979 was beginning to squeeze smaller herd owners not belonging to co-ops out of the areas, since the co-op system was in effect enclosing grazing lands. One of the secondary or incidental objectives of the Rangelands Program was to develop grazing lands so that the nonmembers would be assured of pasture. Presumably, the countervailing force would be grazing **associations**, but some co-ops on a different plan are also alluded to. (There appear to be some subtle hints of a realignment of the political economy and ecology of grazing in the project papers.)

The grazing association is a rather different tenure system, and has indigenous roots in Somalian sociopolitical structure. The associations emerged over the past 40 years, and were fitted into the Somalian system of village and district local government. Transhumant herding groups from outside the association region are given the right of limited grazing in the territory--a practice that the co-ops did not permit. By late 1979, there were 34 grazing associations in the Rangelands Program region. Each consists of a group of pastoralist families who are elected or chosen by their respective village or district council. The members meet as a body at intervals to decide on management of their grazing territory and its rules.

The key element of the Rangelands Program which concerned these grazing tenure organizations was the District Range Assistants, employees of the National Range Agency. These men would supervise the grazing operations and activities of the associations and also provide a certain amount of extension assistance. The project included funds for the strengthening and buildup of these services.

However, the grazing associations were viewed by the project designers as more than desirable organizations. They were, in fact, prerequisites for assistance to the pastoralists of any kind:

> In order to enhance the participation of pastoralists and their acceptance of restrictions on grazing, a strong non-formal training component has been incorporated into the Project. Establishment of reserves and stock water development has been made contingent on the declared willingness of pastoralists to cooperate . . . [USAID PP 1979, Annex 10, p. 8].

That is, the pastoralists were required to conform to the project's definition of what is good for livestock production before any benefits could flow to the range areas. The point, of course, can be argued: since the grazing associations had strong indigenous roots in Somalian land tenure and local government, the demand may not have been unreasonable. It was, however, a competitive strategy, designed to favor the grazing associations over the cooperatives, the latter being seen as a constraint on grazing and production in certain localities.

Whatever the merits or demerits of requiring conformity, the question here is whether the project made adequate provision for the "non-formal training" and education functions which it felt would be required as a means of persuading pastoralists to accept the Rangelands Program. This requires an examination of the fund allocations, as shown on Table 6 (p. 65).

Thus, the logistic items--construction, vehicles, machinery, equipment, furniture, vehicle and machine operations, maintenance and utilities, and food rations--constitute a total of US$24.4 million, or more than half of the grand total. Salaries for foreign technical assistants add another US$10.93 million. Items which conceivably might reflect the training and education functions--professional services, fellowships, and perhaps local salaries--are funded by US$9.59 million. The two project papers do not include a description or presentation of the "non-formal training" or extension program, although they do contain a single paragraph describing the **formal** training at the Livestock and Range School, an institution to be funded by the program and operated by the NRA. The fellowships and professional services refer to this operation, not to the work with pastoralists. Thus, the nature of the important educational functions directed toward pastoralists, to obtain their important consent and participation, cannot be determined from these papers, and no budgetary item specifically pertaining to it is apparent.

Although it might be argued that the extension training services are to emerge out of the reconstructed and strengthened National Range Agency as a matter of course, one can conceive of a rather different Rangelands Program which would achieve more effective integration of government agencies and the producer population. Such a program would consider the pastoralists as the target beneficiaries--not as secondary, or "effect" beneficiaries. Major funding allocations would be made for extension services, involving local semi-permanent training schools and facilities in which pastoralists would participate directly in the construction of grazing reserves, water facilities, and the like. Unless producers participate directly in resource development and conservation projects, they have little understanding or sympathy with them. In the Western United States and Canada, for example, many of the experimental plots formerly maintained exclusively by and on agricultural research institutions have been distributed to farmers and ranchers where the grain and forage crop varieties can be managed in the context of a practicing agricultural regime, and not in artificial, ideal, or experimental conditions.

Aside from the participative function, there is a need to utilize pastoralist labor. The vast construction projects in these livestock development schemes could make use of human labor more effectively--this is true for all of Eastern Africa. By spending large amounts of project funds on machinery

and other high technology used for resource development, the problem of surplus population created by various political, economic, and environmental forces is not dealt with. During the period when Somalia herders were migrating by the thousands into Kenya, construction projects of all kinds associated with the livestock projects were utilizing expensive, high-energy technology throughout the range areas.

There is no question that the Rangelands Program will be of great benefit to Somalia insofar as important organizations have been created, and their functions defined. In a monocultural economy (mainly livestock) like Somalia, perhaps centralization of control is required. However, the producers are still vital to the realization of national goals; if their interests are not safeguarded, or their incentives cultivated, the system will not prosper.

The aftermath of these two development programs in Somalia are two large agencies: the Livestock Development Agency and the National Range Agency. Both can function as parastatal entities, minimally responsible to the government, and with considerable de facto police and regulatory power over the pastoralist producers--upon whom the whole structure rests. The usual question arises: Who regulates the regulators? This issue is now of crucial significance for Third World countries, thanks to the development programs funded through foreign aid. In the case of the Somalian situation just reviewed, a possible alternative to the present situation would be a "National Resources Agency" charged with the responsibility of monitoring and researching the use and conservation of all physical resources. This information would be released to the farmer and pastoralist communities, with appropriate non-formal training and extension education to back it up and interpret it. Guardianship of the range would be provided by extension officers for the ministry who would report to something similar to the U.S. Soil Conservation Service. Local producers--both pastoralists and farmers and the transhumant combination--would sit on committees and councils for both resource research and conservation agencies. This structure, plus the active participation of pastoralists in some of the functions described previously, might be an improvement on the present system, with its authoritarian powers, entanglements with bureaucracy and government financing, and personnel relations.

F. Recapitulation

Indications from observers in the field in the 1980s suggest that conditions for Somali pastoralists have worsened. The range continues to deteriorate; herds are not under control; but even more significant is the fact that the projects seem to have strengthened the traditional livestock merchant class, building on the facilities introduced by these projects and bypassing the pastoralists. Some of the new grazing reserves appear to have fallen into the hands of these people, who use them to feed up the animals for export. As Aronson (1982) notes, "The livestock merchants control a vertically integrated industry that has contributed to range degradation in the hinterland surrounding Berbera, increased the dependence of primary livestock producers, and kept pastoral technology from changing" (1982:3). This traditional merchant trader group is acknowledged in the USAID paper (1979:19), and needs for "improvement" acknowledged in a single sentence, but was not deemed "critical to the success of the present project" (USAID 1979).

The point is that projects like the two considered here simply reinforce the existing economic structure; the government agencies are not only powerless to change it, but must work in collaboration with the dominant group in order to maintain output. It is interesting that the Somalian government was a revolutionary socialist regime at the time the project began, which opposed Arab-type socialism and its compromises with capitalist enterprise or at least the conservative financial class that controls the economies in these states. Yet, it tolerated and utilized the same elements in its livestock industry. This was, perhaps, its own business, and it is not really our concern. Ours is the development program, which will have difficulty realizing its noble aims in the face of its socioeconomic and technological requirements.

VII. THE KENYA RANGE, LIVESTOCK, AND RANGE DEVELOPMENT PROGRAM

A. Introduction; History; Description

This treatment of the Kenya program is divided into this project review, and a separate chapter dealing with the group ranch and other forms of grazing control in Kenya, and in comparison with the situation in Tanzania. Since the problems are similar in both countries, and since one substantial tribal group, the Masai, have been the object of development measures associated with ranch organizations in both cases, it seems wise to delay the detailed treatment of this feature.

The principal theme of the preceding section dealing with Somalian USAID and World Bank Group projects was the use of the government agency as a means of stimulating and aiding livestock production in an economy where the major producers are tribal pastoralists with a considerable degree of migratory movement in search of pasture. The problem is similar for Kenya, although somewhat less emphasis was placed in the project designs on government organizations because these were already in an advanced stage of construction previous to the onset of funding. Nevertheless, the Kenya projects also relied heavily on such agencies. The principal organizational form emphasized in the Kenya program was the ranch, conceived as an entrepreneurial organization designed to raise livestock, and with a variety of tenure and management arrangements from communal, to cooperative, to independent corporate identity. The Kenya and Tanzanian projects have done more with the ranch models than the Somalian program has with its grazing association.

The Kenya program began in 1960 and has included development projects covering all aspects of livestock production: range conservation and improvement; water development; livestock breeding and management; marketing, including roads, holding pens, and other facilities; and, as a major emphasis, the strengthening of various types of ranching operations and grazing schemes. At the time of writing, this program is in what the World Bank calls "Phase II," which began in 1975-76 and is designed to run through 1985 (IBRD-IDA 1974). This livestock-oriented program has paralleled one for crop agriculture with similar duration. The congeries of projects involved in both of these programs probably should not be described as a coherent planned program of agricultural development. Overall planning began to emerge in, at least, Phase II of the livestock program, although evaluative reports on the program have continued to fault the effort for lack of coherent or informed planning. The program has been, on the whole, a matter of numerous separate, loosely coordinated projects funded by many different donors. For example, the program designated as "Livestock Development Program, Phase II" is called "National Range and Ranch Development Project" by USAID (USAID-Devres 1979). There are slight differences between the two since the agency funds were divided somewhat differently among the various projects.

In addition to World Bank and USAID funds, other donors in Phase II were Canada and the United Kingdom. In earlier phases of the program, Sweden contributed substantial funds, and research efforts related to the program were carried out by at least ten institutes or universities in North America and Europe. This is probably a modest tally; one of the criticisms encountered in evaluative studies of the program and its projects concerns the large number of donors and their contrasting regulations and interests (e.g., USAID-Devres 1979:III.D, p. 87). This multiple-donor funding and supervision of projects results in complex financing problems involving foreign exchange and debt servicing, as well as different expectations and standards of success or failure.

The financial arrangements for World Bank Phase II were as follows: The total cost of the program--all projects--was US$60 million. These funds came from the sources listed in table 7.

TABLE 7

Funds for IDA Phase II of Kenya Livestock Development Program

SOURCE	FUNDS PROVIDED
Canada	US$2.4 million for water development and wildlife control
United Kingdom	US$3.7 million for livestock marketing projects
Government of Kenya	US$40 million
Project beneficiaries (mainly ranching companies)	US$8.6 million
International Development Association (World Bank) credit	US$21.5 million to pay foreign exchange and local currency project costs

SOURCE: IBRD-IDA 1974; data assembled from pp. i and 14-15.

Arrangements for disbursement were as follows: the IDA credit of US$21.5 million would be paid out over a period of five years and would cover the following (IBRD-IDA 1974:15):

- 50 percent of total expenditures for ranch and feedlot loans;
- 50 percent of total development for wildlife control;

- 100 percent of expenditures for consultants and technical services;
- 50 percent of total expenditures for veterinary projects.

Some earnings from the credit would assist in these disbursements.

Of the total program cost of about US$60 million, US$18.9 million was used to pay foreign exchange requirements. The detailed figures are provided on the accompanying table 8.

TABLE 8

Funding of World Bank Phase II, Kenya Livestock Program

	- KSH MILLION -			- US$ MILLION -			FOREIGN EXCHANGE	% OF PROJ.
	Local	For-eign	Total	Local	For-eign	Total	(%)	COST
Ranch Development								
Fixed investment	31.3	34.1	65.4	4.38	4.77	9.15	53	
Breeding stock	93.3	-	93.3	13.07	-	13.07	-	
Working capital	28.5	9.1	37.6	3.99	1.28	5.27	25	
(including steer purchase)	153.1	43.2	196.3	21.44	6.05	27.49	22	72
Range Water Development								
Isiolo District	3.3	3.2	6.5	.46	.46	.92	50	
Northeast Province	4.2	11.4	15.6	.59	1.59	2.18	72	
	7.5	14.6	22.1	1.05	2.05	3.10	66	8
Livestock Marketing								
Markets	3.5	6.4	9.9	.49	.90	1.39	65	
Stock routes	8.0	7.1	15.1	1.12	.99	2.11	48	
	11.5	13.5	25.0	1.61	1.89	3.50	54	9
Wildlife								
Amboseli, Masai Mara	1.0	2.7	3.7	.14	.38	.52	75	
Nairobi Park	3.5	2.7	6.2	.47	.39	.86	45	
Censusing and	1.8	3.2	5.0	.25	.45	.70	64	
monitoring	6.3	8.6	14.9	.86	1.22	2.08	58	6
Veterinary Services	2.2	1.1	3.3	.31	.15	.46	32	1
Research and Technical Services	1.5	1.9	3.4	.21	.25	.46	55	1
Agricultural Finance Corporation	3.8	2.2	6.0	.53	.31	.84	37	2
	186.8	85.8	272.6	26.13	12.02	38.15	31	100

(Table 8, Funding of World Bank Phase II, cont.)

	- KSH MILLION -			- US$ MILLION -			FOREIGN EXCHANGE	% OF PROJ.
	Local	For-eign	Total	Local	For-eign	Total	(%)	COST
Contingencies								
Physical	1.3	1.5	2.8	.17	.22	.39	54	
Price	103.5	47.6	151.1	14.50	6.66	21.16	31	
Subtotal	104.8	49.1	153.9	14.67	6.88	21.55	32	36
Total Project Costs	281.6	134.9	426.5	40.8	18.9	59.7		

SOURCE: IBRD-IDA 1974:13.

(These figures are provided solely to give the reader a general idea of the costs of these projects, and not to serve as a necessarily accurate accounting of actual expenditures and disbursements.)

Before we proceed to analysis of these projects, we need more background data.

In the mid-1970s, when Phase II commenced, the livestock population of Kenya was as depicted in table 9. About one-half of the cattle were located in agricultural areas and belonged to farmers and semi-pastoralist peoples. The other half were on rangeland, and about 2.5 million of these were in herds belonging to migratory pastoralists. One-half million head of cattle of those considered to be in "agricultural areas" were on large "commercial" and "company" ranches (these are technical terms; see subsequent section). That is, this half-million head represented the prime commercial beef herd of Kenya, used mainly for export sales. Farmer cattle mainly served the domestic meat market and also subsistence needs. Pastoralist livestock served subsistence and some commercial domestic market needs. All dairy animals were on commercial farms.

TABLE 9

Livestock in Kenya: @1975

Cattle	9.5 million animals
Dairy cows	0.5 million animals
Sheep and goats	8.0 million animals

SOURCE: IBRD-IDA 1974.

During the mid-1970s, approximately 800,000 head of cattle were slaughtered in Kenya, making an offtake rate of about 9 percent--although an averaged figure like this hardly represents the great variation in output between the various modes of ranch and pastoralist production (ranch offtake was as high as 12 percent; pastoralist, as low as 3 percent). Moreover, in the same period, about 285,000 head of cattle were actually sold on Kenya markets, which reduces the 90 percent rate to about 3 percent in terms of animals actually sold. (The difference between the 9 percent and the 3 percent rate is one possible rough index of the extent of use of cattle for subsistence purposes.) Of the 3 percent rate, about half was from the commercial and company ranches; the remainder, from farmer and pastoralist herds. Precise figures on the number of cattle sold for beef purposes from pastoralist herds in the north and northeast and from the Masai group ranches in the south are difficult to determine. (An unknown fraction, incidentally, consists of pastoralist cattle sold through illegal or covert channels to buyers in other countries.)

During the 1970s, Kenya's official export trade in beef cattle increased steadily: in 1972, the sales totaled about US$24 million; by 1980, the figure was about US$35 million. These are important figures for Kenya; they help account for the interest shown by the government in livestock production. Much of this trade was for the tourist industry, not only in Kenya, but in neighboring countries in Africa and the Middle East.

The domestic per capita beef consumption in Kenya in 1972 was about 13 kg: the highest amount for Eastern African countries and a reflection of the relative prosperity of Kenya, which, after independence, elected to preserve a capitalist, export-industry economic posture.

Kenya also has had more success than other countries in the region in controlling debilitating bovine diseases. The competition for pasture presented by wild game has been a persistent problem for Kenya, but the country has done more to control the game than Tanzania and Uganda. About US$2 million were allocated in the Phase II program for control of game: mostly in the form of providing water sources in the game parks to stabilize game movements and help prevent competition with cattle. However, the reasons for emphasizing game control had as much to do with the tourist dollar earned by the game parks as with livestock production (e.g., IBRD-IDA 1974, Annex 2).

Principal Kenya government agencies concerned with livestock are the Department of Livestock Development, which became an autonomous ministry in 1980, separating from the Ministry of Agriculture. This separation was sought for years, due to the seeming neglect of livestock matters by the crop-oriented Agriculture Ministry. (A similar separation took place in the Sudan government, also in 1980.) Water development in rangelands and ranches is under the control of a separate ministry in Kenya (and again, also in Sudan), a fact which had caused considerable concern since the Water people allegedly are more interested in using their budgets for town and industrial water development than for livestock. Marketing--the holding areas, stock routes, and other facilities--is under the control of the Livestock Marketing Division, now a part of the new separate Livestock Ministry. This division is considered to own the marketing facilities, created and financed mainly by foreign aid funds

in the development program we are considering here. The Division also is livestock buyer of last resort, and 18 percent of all cattle sold in Kenya in 1975 were purchased by this agency. Nearly all of these were animals raised by northern pastoralists.

The financing of Kenya agricultural development through loans to producers is dominated by the Agricultural Finance Corporation, a government company.

The principal objective of Phase II (this is our shorthand way of referring to the program henceforth) was to improve and facilitate livestock production on the several types of "ranches" in Kenya. This, in the USAID "Logical Framework" terminology, would be the "purpose." The major "goal," however, was to increase livestock production, and behind this was the increasing export value of beef and tourism in the developing Mid-East-Africa region. That is, the entire program related to economic objectives rather than the welfare of the pastoralist and agricultural population. However, an increase in the output of commercial cattle was considered to automatically benefit the people producing them since it would raise their income. (The pros and cons of this economistic thinking have been noted, and will be discussed further.)

One additional piece of background information is required: the nature of the ranching organizations constituting the prime focus of effort in the development program (see Ayuko 1981 for a description; and Figure 4 [p. 116] in the present paper for locations).

The Group Ranch. Mostly in the southern Masai country, with a few in Samburu territory in the central-north-west of Kenya, these are carved out of the old British tribal reserves. A total of 60 were targeted for development in the early 1960s. A group ranch consists of from 50 to 100 nuclear families (many of whom constitute a single kin group), who have received a clear title from the government to a tract of land, and who are expected to remain within the boundaries of that tract, raising cattle primarily (and other livestock if they can graze them). The ranch families choose a managing committee which establishes stocking rates; marketing arrangements (surplus stock is sold on a rotational basis among the families); and maintain their own family-owned herds --but have collective title to the land. Financial arrangements are also a group function, and repayment of loans and all services is made by a per-head charge to the herd owners. Sharing in the profits of cattle sales is based on the number of individually owned animals sold minus any charges due for services or loans. (For an introduction to the role of the group ranch, see the following: Hedlund 1971; Helland 1978 and 1980a; Galaty 1980.)

The Company Ranch. These are commercial enterprises leasing land on an annual fee basis from the government. They are limited companies responsible to at least 50 shareholders per ranch, most of whom do not live on the property, some not in Kenya, although many are Kenya government employees. A few Africans are included in the shareholder group of many ranches, and the number is increasing. Shares can be purchased with either cash or cattle. In contrast to the individual-family herd ownership pattern in the group ranch, the company ranch cattle are collectively owned by the shareholders. Animals are managed and sold according to agreements between the shareholders and the

managers, who are paid by a board of directors. Any shareholder can sell his share at any time.

The Cooperative Ranch. Essentially the same as a company ranch, but established in accordance with Kenya government cooperative legislation, which requires a different method of shareholding and compensation. Co-op ranches are also entitled to certain government benefits as cooperatives, including low-interest loans for development. Members cannot arbitrarily sell their membership to an outsider; arrangements for partial equity vesting must be made with the cooperative society. A total of 21 company and cooperative ranches were listed for development.

The Commercial Ranch. This label is used to describe the 100-odd large enterprises operated by shareholders on top-grade rangeland in central and southern Kenya. Some have been purchased from European owners by Africans in recent years. About half are owned by from 50 to 100 farmer shareholders, as a result of the land repatriation policy--land purchased by the government from British owners. Again, government employees are among the shareholders. The lands are in freehold tenure, and are territory appropriated by the British during the Protectorate. A variety of management patterns exist: a few are co-ops, most are limited companies; some are operated by the owners, others by hired managers for absentee owners, many of whom live in England and Canada. These ranches control the best beef herds in Kenya and sell most of their stock to export traders or hotels.

The Grazing Block. As we have noted earlier, experiments in the assignment of grazing lands to pastoralists in the Kenya north and northeast began under the British, with little success in restricting pastoralist herd and population movements. While the program under examination here appears to have focused mainly on the established ranches (including the southern pastoralist group ranches), the northern pastoralists were expected to move toward the creation of group ranches out of the old grazing blocks. To facilitate this, the program included assistance in providing water sources, roads, marketing facilities, and so on, as well as a strengthened program of land tenure reform and consolidation. The grazing blocks were also conceived as the focus of future village settlements, since as the pastoralists increased offtake and sent their immature animals south for feeding on ranches or farms, they were expected to settle down and become ranches. (For a brief study, to be considered in greater detail later in the paper, of the extent to which these expectations might be realized, see Helland 1980b. For ethnological data on the pastoralist peoples of northern Kenya, see Spencer 1973; for the northeast, see Gulliver 1955).

Funds for Phase II (the @US$60 million) were allocated by the World Bank as displayed in table 10.

The 72 percent devoted to ranch improvement is the key item. Approximately half of the funds went to group ranches; half to the company and commercial. This is not in proportion to the number of cattle held in these ranches. As noted previously, about 0.5 million animals were on the big commercial ranches, and another 3 or 4 million on other ranches, as against the 2.5 million in pastoralist herds, including the group ranches. The value

TABLE 10

Allocation of Phase II Funds to Projects

	(%)
Improvement of group, company, cooperative, and commercial ranches	72
Routes to livestock markets	9
Wildlife area development	1
Veterinarian services	1
Research and technical services	1
Project administration	1
Agricultural Finances Corporation, for loan fund	2
Contingency fund and physical equipment, etc.	36

SOURCE: IBRD-IDA 1974, p. 13. (See, also, "Investment Cost" table, Annex 7, Table 1 [no pagination], for allocations of the 72 percent among various types of ranches, as noted on previous page.)

of the half-million animals in foreign exchange earning power was, of course, many times that of the pastoralist herds, used mainly for domestic consumption at government-stabilized low prices. Internal evidence in project papers suggests that the per-head expenditures by the projects on the commercial and company-co-op ranches was about twice that for the pastoralist herds, with some exceptions in the case of one or two of the southern Masai group ranches. USAID quotes a figure of 45¢ as the return on every dollar spent on commercial, company, and some co-op ranches. A single figure is lacking for the group ranches, but amounts from 0 to 15¢ on the dollar appear in other accounts. There seems no doubt that if the livestock development program is viewed in purely economic terms, then investments in group ranches and other pastoralist herding operations would have to be considered risky. That the Phase II program was conceived in terms of high-value production output seems clear from the text. The following is Section VII, "Benefits and Justification," and is quoted in full:

> Additional Output
>
> 7.01 Incremental beef production under the Project would be about 23,000 m tons of meat at full development in 1985--an increase of about 50% over the present marketed production of 43,000 m tons (Annex 11). Part of this incremental production would increase foreign exchange earnings by increasing the export of canned, chilled, and frozen beef probably by expanded sales to their present markets. The main increase would be in exports of chilled and frozen beef. If prices were decontrolled (¶6.02), the exports of chilled and frozen beef would rise from about

2,500 m tons in 1972 to about 6,000 m tons in 1978; export of canned corned beef would increase from 10,000 m tons in 1972 to about 11,000 m tons in 1978, a total increment of about 4,500 m tons. The Project would, therefore, enable Kenya to diversify its beef export mix, presently dominated (80%) by canned corned beef exports. By 1978, the net foreign exchange earnings from incremental exports would be about US$1 million annually; by 1985, with additional investment in meat processing, this would increase to US$7 million per annum.

Economic Rate of Return (Annex 11)

7.02 The economic rate of return from the Project is estimated at 25%. Unskilled labor was shadow priced at 50% of the market wage rate (the market wage rate is Ksh1800 per annum) in view of the substantial underemployment in the range areas; the foreign exchange costs and benefits (exportable beef) were shadow priced at Ksh10 per US$1 to reflect more adequately the scarcity value of foreign exchange (the official exchange rate is Ksh7.14 per US$1). If neither labor nor foreign exchange were shadow priced, the economic rate of return would be about 21%. The individual economic rates of return of the separate project components have not been calculated as the degree of interdependence of some components would imply arbitrary cost and benefit apportionment. Separate financial rates of return have been evaluated however (¶6.04); each of these is satisfactory and in each case, the economic rate of return would be higher.

7.03 An increase in investment costs of 10% would lower the rate of return to 23%. If investment costs were increased and benefits decreased by 10%, the rate of return would be about 17%. Even under these unfavorable assumptions, however, the rates of return are still high. Nevertheless, the Project is not without risks. While the potential for expanding the livestock sector is great, the problems of implementation are likely to be considerable, mainly because of lack of managerial and technical expertise. Although the basis for ranch organization has been pioneered under the first project, it is too early to assess the impact of group and company ranches because of the complex social and organizational factors involved.

Employment and Income Distribution

7.04 At full development (1985) the Project would create 5,000 new jobs within LMD, AFC, and on the wildlife and grazing schemes. 10,000 families totalling 50,000 persons would be engaged on the ranches and their per capita cash income would increase from US$56 to about US$190 per annum. In the Northeast and Isiolo the water development schemes are expected to benefit the 40,000 pastoralists of about 200,000 cattle assuming five cattle/capita), increasing their cash incomes from US$56 to US$80 per annum at full development. Since average per capita income in Kenya is about US$140, the project would benefit primarily the poor sector of the population. Income re-distribution will result from the de-controlling of prices and revised grading and pricing structures (¶6.02 and ¶6.03) [IBRD-IDA 1974:19-20].

Possibilities of achieving these objectives would appear remote, on the basis of the comments on organizational problems, and subsequent reports and conference discussions. Benefits to the group ranches were slight if any, and the reasons for this will be presented in a moment. At any rate, financial benefits to the "beneficiaries" which invested in the project were projected as fairly substantial, as the following paragraph suggests:

> Producer Benefits
>
> 6.04 The rate of return on incremental investment would range from 12 to 23% on the ranches, and would be about 16% on the feedlots and 18% on investments in livestock marketing. The increases in income and the financial rates of return would be sufficiently high to make the proposed investments attractive (Annex 10). In calculating these returns, current prices for inputs and control free prices for outputs, were assumed. Producer benefits in Northeast Province and Isiolo would be derived mainly from the provision of water to complement existing feed. Per capita cash incomes in these areas are about US$56 per annum; the Project is expected to raise these to about US$80 per annum by 1985 (Annex 11) [IBRD-IDA 1974:19 (preceding Section VII for some reason, although it would seem to belong in that section)].

Since pastoralists did not make investments in the ranch improvement facilities, other than, perhaps, their own labor, one could not expect them to benefit on the scale described. The paragraph refers (though it is not entirely clear) to the company and commercial ranches and some of the cooperative ranches (no data could be found on the relative amounts of investments in the projects by the various ranch beneficiaries).

Although some benefits did flow to pastoralists and to the group ranches, the World Bank Phase II program probably should be viewed mainly as a government investment scheme to build up cattle ranching ventures in the private business sector of the Kenya economy, to increase the flow of foreign exchange from tourist and export trade. This would benefit many African shareholders as well as Europeans. It is doubtful if this program should be viewed as a serious attempt to improve pastoralist livestock production, increase the income of pastoralists, or otherwise improve or modify the position of these people in the national socioeconomic structure.

As already noted, Phase II cost various donors, mainly the United States, via the World Bank, around US$60 million. Some data exist for earlier phases. The first World Bank credit for livestock development was provided, in 1968, with a total cost of about US$11.4 million. IDA and the Swedish International Development Agency paid for 63 percent of the total project costs with equal amounts. Between 1960 and 1974, the World Bank (IDA) made seven loans and credit allotments to the Government of Kenya for agricultural projects, totaling US$23.7 million. The World Bank (IDA) also lent the government a total of US$116 million for rural road development. Adding these to other episodic data in IBRD-IDA reports, the Bank spent approximately US$300 million on all types of Kenya agricultural (crop and livestock) projects from about 1960 to the late 1970s.

B. Critique

It is time now to turn to a critique of the operations of the Kenya livestock development program. The principal document used for this analysis has been referred to as USAID-Devres 1979, and it constitutes an evaluative report by an outside consultant firm of the USAID participation in the overall Kenya programs. The writer was not provided with the original USAID "project paper" on its share in the Kenya program, nor with an **evaluation** of the World Bank "Phase II" program;* however, from internal evidence in both documents that are available, USAID's contribution to the program was distributed across most of the same projects. No financial data are given in the evaluative Devres report.

These missing documents are, however, not really very important. The Devres analysis is sufficient to document the major issues since the projects are the same as those in the World Bank segment. We shall also make an interpretation of the evaluation report itself, since evaluations of development projects are really part of the development process; that is, they are a phase of the administrative system that produces projects, and many criteria used to determine success and failure are derived from the same source.

Development projects are measured against their goals and purposes; if these are not met, the project fails. A good evaluation report, of course, examines the objectives themselves, to see if they were appropriate to the task or to the conditions of the country and its economy.

The report considered here was produced for USAID by the Devres Incorporated consulting firm. The majority of such reports are produced by outside agencies, or at least the major or terminal reports are; briefer, interim evaluative studies are made by the agencies themselves at regular intervals.

There is no need to list all the analyses and conclusions of the report, and we shall make a selection of the items which have special reference to the topic of the paper: migratory pastoralist societies and their economy. The most general conclusions or findings may be given as follows: (1) The Kenya program was "a truly heroic effort under fragile circumstances" (USAID-Devres 1979:1); that is, its sheer size and ambitious goals were such that only partial success could be expected. (2) It was conceived without considering the administrative immaturity of the country during the 1960s and 1970s, hence could not be adequately administered by the government. (3) The program was based on the desire to increase livestock production in Kenya--all other purposes were secondary, or derived from this production goal. The report found that this goal could not be achieved with the means used; but even more important, it was by no means evident that an increase in livestock in Kenya was

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* The IBRD-IDA 1974 report is called an "Appraisal," which suggests an evaluation. However, the Bank uses the term to refer to what AID calls a "project paper": the official, published descriptive announcement of acceptance of a planned and funded project. The key missing AID documents are: "Project Paper Revision No. 3 (615-11-190-157), as revised in PP Revision No. 4, dated July 11, 1978" (USAID-Devres 1979:24).

wise or could be supported on the resource base available. (4) The design was accordingly judged to be faulty both in its basic assumptions and in the administration of the projects.

Before details are provided, it is necessary to consider the manner in which programs like this are conceived and planned. In 1960, the initial year of the Kenya program, the country was in its first bootstrap phase, following independence from British control. The international climate was such as to foster a sense of extreme urgency in these African countries, whose poverty, lack of skilled personnel, and restless, excited populations demanded immediate and massive aid. Thus, projects were conceived on a large scale. Added to this was the climate of optimism associated with the concept of planned change: perhaps largely and mainly an American notion deriving from the technological and economic successes of American institutions, and, especially, the victories in World War II, which were viewed as organizational and administrative--social--achievements as well as technological. A third element was negative: the lack of something: knowledge about the peculiar conditions of part-commercial-part-subsistence agriculture in Africa: its great diversity, ecological intricacy, and complex linkages to ethnic allegiances and cultural patterns. American technical aid specialists had little or no familiarity with these conditions; they were, on the whole, imbued with an economistic philosophy which held that Africans would respond to the same economic and financial incentives as Americans; and its corollary, that all people seek to improve their lot, i.e., to increase production and hence their income.

While all the above conceptions and attitudes changed greatly as the years passed, the projects conceived originally under their aegis did not change fundamentally; hence, the same framework of goals and purposes persisted. It is also important to note that the optimism about planned change, the ignorance of indigenous systems of production, and the tendency to operate on the basis of an economistic social psychology were, on the whole, shared by members of the country governments. These people were, in most cases, former colonial subjects (or expatriates) trained in the metropolitan countries, who often had little more understanding of their own--new--fellow citizens that their former colonial masters. Many had much less.

Consequently, the Devres evaluation report omits one important consideration: that the Kenya livestock development program should not have been expected to succeed in toto, since its purposes transcended its ostensible goals. Moreover, it was by no means a total failure. Important gains were made in a number of important infrastructural areas: livestock health, marketing facilities, water development, and, of course, the training of hundreds of Kenyans in new skills. Much of the groundwork for a future livestock industry was created in the 20-odd years of the program to date; this is no mean accomplishment, considering the "faulty assumptions" and inflated objectives. Much planning in human affairs is of this type; to get a massive effort involving basic change off the ground, it is necessary to overplan, overbuild, in order to instill optimism and enthusiasm. The social cost of this method is, of course, an inevitable aftermath of failed expectations. This is, however, a normal occurrence in modern social process and should not surprise anyone who understands the nature of change in social structure and productive relations. Equally to be expected are the critical assessments and recriminations; it is

by such evaluation that things have some chance of proceeding more realistically in the next round. However, since organizational patterns have a way of lagging behind reform, reform is never complete. And as Albert Hirschman cogently observed at the end of the 1960s development decade, often the major accomplishments of projects were the unanticipated, and even these were as likely to emanate from mistakes as envisaged accomplishments (Hirschman 1967, especially Ch. 5).

Now: "project goals."

The Devres evaluation finds these to be economic, both in the nature of their assumptions and the indicators selected to test accomplishments. These indicators and assumptions differ only slightly from those used in the World Bank paper. Let us consider the principal assumptions first.

These are based on the projected increase in numbers of livestock resulting from the project operations (and other benefits), which have to be valued in some fashion. Both the World Bank paper and the Devres evaluation of the USAID version of the program use favorable projections of price-cost ratios for livestock production for the duration of the project (roughly, mid-1970s to mid-1980s). This yielded a return on investment of 30 percent for the USAID calculations, and ranged from 17 percent to 25 percent for the World Bank (see previous quoted paragraph). By 1979, when the Devres evaluation was completed, the price-cost ratios for livestock production and sales were unfavorable, and many Kenya ranches were in financial trouble. Demand for livestock remained high in Kenya, but the demand was not producing marketed animals. This was due to the fact that the volume of animals predicted had not materialized, since volume was based on expectations of substantial numbers of immature animals coming from the northern pastoralist herds. The program was supposed to create conditions which would induce these people to send their immature animals south for feeding, where facilities were to be created for finishing and marketing. There was, however, no increase over the 1960s figures in the number of immatures sent south. Thus, the northern pastoralists were not induced to participate on the basis of promised cash income. In addition, the rising costs of production in an inflating economy made production on the southern ranches increasingly difficult.

Why did the pastoralists not respond to the economic incentives anticipated by the program? Partly for the reasons discussed in an earlier section, concerning the "backward bending supply curve" response of livestock raisers, especially a severe drought which encouraged them to retain stock or rebuild depleted herds; partly because they had little need for cash, since consumer aspirations were low in the north; partly because of the artificially maintained low prices for domestic beef; and partly because certain development measures to improve livestock care were provided gratis by the government. Offtake was estimated by the Devres team at about 4 percent for a mid-1970s average and could not have reached 8 percent, the figure selected by the USAID project planners to create the favorable economic outcome predicted, at any time. Anthropologists consider 8 percent as outlandish; livestock specialists who know Africa regard 4 percent as optimistic. Actual sales offtake, as already noted, was around 3 percent.

As noted, the Kenya program, like others, assumed that increased production will result in enhanced income; and hence, improved welfare for the target populations. Therefore, indicators of the expected results need to be devised. USAID called these "objectively verified indicators" (USAID-Devres 1979:24). Three of these were presented: the first was called "family real income" for both the northern pastoralist populations and the more developed ranching areas in the south and central portions. Since nearly all of the families in the north, and many of those in the ranching areas of Kenya (e.g., the small-farmer shareholders in the commercial ranches) were subsistence producers in greater or lesser degree, family income cannot be determined with any degree of accuracy, nor is cash income a measure of economic status. The Devres team performed its own calculations on data collected in the field, finding that "only from 5 to 20% of the total flow of energy and materials recycled within the family or clan unit" were exchanged in the marketplace (USAID-Devres 1979:24).

For the ranches, the team noted that USAID papers did not specify what was meant by family income, nor was an attempt made to measure it. This was due to the fact that, for the company-cooperative ranches, most shareholders do not live on the premises nor manage the livestock. Since 1974, none of the ranches paid dividends to shareholders, due to the loss of livestock in the severe East African drought. These same ranches, however, were given loans by the Agricultural Finance Corporation of Kenya, out of the overall program funds, these loans being for ten-year terms. The Devres team found that this resulted in a majority of ranches going into debt to the AFC with poor prospects for repayment, and most were actually in arrears on payments by 1979. Managers of many of these ranches are junior-grade government officers, salaried by the bureau and, therefore, unaffected by the financial condition of the ranch (this is a service to the ranches from the government, due to the shortage of qualified managerial personnel).

The Devres team reported flatly that in their field work, they found no evidence of any change in quality of life that could be associated with the grazing block program in the northeastern province pastoralist areas (USAID-Devres 1979:26).

USAID also devised a second set of indicators related to an expected increased sedentarism among pastoralists. These people were supposed to settle in village areas, enjoying the social services to be provided by the government and encouraged to do so by the increased income derived from their sales of animals for feeding elsewhere. Since this objective of stratification of livestock production did not materialize to the extent predicted, no settlement occurred, and the pastoralists apparently remained migratory and adapted to transient pasturage. The team also questioned the merits of sedentarization, suggesting it "may not be in the interests of those pastoralists" (p. 26).

The third set of indicators concerned the services to be enjoyed by pastoralists (education, local government, etc.) and the improved ranching and marketing facilities the program was supposed to provide. The team decided that since these services develop very slowly, no evaluation could be made. So far as the southern ranches were concerned, the team noted that, if

anything, marketing facilities had deteriorated during the period of the program, due to unfavorable cost-price conditions.

The team also noted that the assumption that improvements in income and the assignment of permanent landholdings to pastoralists currently operating on ambiguous grazing blocks, could not be expected to encourage sedentarization since the land program was behind schedule. Moreover, the government was known to be considering individual property ownership for herd owners, thus confusing the issue. They might well have added that Masai pastoralists regard permanent tenure as a valuable investment, but not necessarily requiring restriction of pasturage to the particular tracts, especially in periods of drought. Moreover, the subsistence factor and the value of herds as wealth can coexist with market sales of animals--one factor does not automatically create or cancel the other--although, if sales are linked to a concept of money capital, the subsistence function and the definition of livestock as wealth will begin to change.

With respect to the question of economic incentives relating to commercialization of pastoralist production, the Devres team noted that government assistance in the provision of water holes, cattle dips, veterinarian services, and the like appears to delay, rather than facilitate conversion. Pastoralists simply accept these facilities and use them for whatever fraction of the herds they choose to sell. However, since they do not have to finance these facilities out of their income, there is no incentive for increasing offtake. Both the World Bank and AID, in addition to other donors, funded the AFC and urged use of these funds for loans, which increased indebtedness and did not have the desired effect. The team urged that pastoralists be required to pay, at least in part, for services, and that stronger efforts at extension work and education be instituted.

Investigations by the team of all other objectives of the program--water impoundments and boreholes, project equipment, maintenance facilities, meat processing research, and other matters--were behind schedule or showed deterioration.

Ranch development (group, company-cooperative, and commercial) was found to have proceeded close to schedule. The program originally called for the establishment or improvement of 60 group ranches, 21 company-cooperatives, and 100 commercial. In 1979, 50 group ranches were found to be functioning; all 21 of the company-cooperative; but no data were given for the commercial (however, from other sources it is known that about 100 existed in the late 1970s and early 1980s). It should be noted also that these numbers date from the early 1960s and are by no means all the result of "Phase II." Moreover, many of the business-sector ranches date back to the British period. Thus, the establishment of the ranches represents a long-term process and should not be considered simply as accomplishments of the project.

The concluding critique of the Devres report (USAID-Devres 1979:112-13) is worth quoting in full, since it represents the position taken by pastoralist specialists over the past decade. The failure to approach the problem in these terms may be considered as the root cause of the persistent "failure" of the projects to meet their objectives with respect to benefits to the pastoralists.

Recommendation: The approach to pastoralists should be modified.

It may be possible to have both increased levels of living among pastoralists and more stability. But this stability does not have to be location specific. Marketing services could "float" from location to location. Even schools and health services could be mobile, moving with the pastoralists rather than being fixed in one particular place. The Masai might have dips or spraying arrangements for their cattle without confinement of group ranches to particular physical locations. And the Somali might produce a bigger off-take of immature cattle if they were free to move in wider patterns than those of the grazing blocks, especially if improved water points and marketing and health facilities were based on this wider pattern of movement.

But the creativity and flexibility necessary to design programs uniquely and appropriately suited to the pastoralists of Kenya are not likely to come from outside donor agencies like AID, nor even from the various ministries of the GOK. These kinds of program modifications are most likely to emerge through the voices of the pastoralists themselves, when arrangements are made for the others to listen to those voices--to listen carefully and in depth, with respect for the wisdom which comes through experience. Getting about the business of encouraging those arrangements is the recommendation to those who sponsored this study.

This development program was based on a set of assumptions which forecast economic behavior of a certain type. The whole structure was erected on the expectation that northeastern pastoralists would begin to ship immature stock south, to permit the ranches and farmers to feed them out, this increasing sales of beef to various buyers, particularly export markets. Thus everybody would benefit from the increased offtake. The scheme, therefore, was rooted in the belief that pastoralists decide on offtake on the basis of motives of economic gain. This belief may be partly correct, but if so, the low prices established by government would invalidate it. Moreover, pastoralists make decisions about offtake on the basis of a great many social, cultural, and economic factors, many of which have no relationship to monetary gain. The program can be faulted most basically, perhaps, for not doing its homework; that is, to determine in advance just what forces govern herd management and especially offtake in migratory pastoralist societies. In addition, the basic philosophy of development was based on the conception of an organization as the unit of production, rather than individual herd owners. And like the Somalian case, government agencies were regarded as critical in providing the necessary factors of production.

This concludes the appraisal of the Kenya Range, Livestock, and Ranch Development Program. Not considered is the problem of the group ranch as a separate phenomenon. While much research has been done on the Kenya Masai group ranches, we shall delay consideration of some of this work until the next section, dealing with Tanzanian Masai projects, since the issues are similar for both countries.

VIII. TANZANIAN LIVESTOCK AND RANCH DEVELOPMENT PROGRAM

A. Introduction: Geographical and Economic Background

In contrast to Kenya, Tanzania has the majority of its land in diversified farm production, the product mix varying by location and climate. Some five agricultural regions are distinguished, four of which contain substantial numbers of livestock. The migratory pastoralist style of production is confined to the north, along the Kenya border, and is associated mainly with the Masai and Gogo tribal groups. Agriculture provides a living for 90 percent of the country's population of 1,315 million, and most of this agriculture furnishes subsistence as well as marketed products.

The major export products are cotton, sisal, livestock, coffee, cashew, tea, groundnuts, pyretheum, and tobacco. Livestock constitutes about 11 percent of the country's agricultural production. The total value of agricultural exports in 1971 was about US$178 million, of which about US$8 million, or 4.5 percent, came from processed meat and live beef cattle. The national herd is around 13 million head, the second largest in Africa, and is owned by diversified farmers and pastoralists in various parts of the country. However, the majority of the animals (exact figure could not be located) are found in the northern part of the country, since tsetse flies limit the distribution and number of cattle in the rest of the country, excepting a limited area around Mbuya in the southwest. In the north, the majority of cattle are owned by the Sakuma people, who manage small herds (20-30 animals) along with their cotton and maize cultivation. The Gogo and individual Masai herds in the northcentral and northeast areas are larger, averaging around 50 head, although the total number is less than the farmer herd. Most of the family income, along with subsistence, are provided by the pastoralist herds, which are grazed on communal lands. The expansion of the pastoralist herds provides the main increment in the expansion of the national cattle herd from 3 million in 1923 to an estimated 13 million in the early 1970s. That is, the pastoralist segment of livestock production has furnished the main part of the increase in livestock production; but at the same time, this increase represents the main source of range degradation and the problem of offtake. The main thrust of the livestock development programs in Tanzania has been toward these pastoralist herds in the north, seeking to both increase offtake, to add to the food and income supply, and also to control herd size to reduce grazing abuse. The situation is similar to that in Somalia and Kenya, but the geographical focus of the problem is sharper for Tanzania since the pastoralist population is more concentrated.

This concentration helps account for the substantial investments in development projects in this northern region. However, the interest shown in the area is also explained by the significant experiments in land tenure and settlement carried on by the Tanzanian government under the leadership of Julius Nyerere. All land was nationalized after independence, and the pastoralist

livestock producers were the targets of many of these experiments. Development projects thus were conducted in the setting of various attempts at introducing new forms of communal tenure and village consolidation. To a degree greater than in other countries, the development program in Tanzania was in part an international subsidy of a social experiment.

The principal factor in the social experiments of the Nyerere government is designated by the Swahili word, ujamaa, meaning fraternal cooperation or family solidarity. This term has been applied to a variety of administrative and socioeconomic arrangements, not all of which approximate the idealized "ujamaa" village," which is a constructed community resembling, in some respects, the "intentional" rural settlements established on the basis of communitarian or communal-property religious ideals in the United States and other Western nations. More details will be given later, in the appropriate setting. However, it is important to note at this point that the ujamaa village, when fully developed, has few ties to the traditional settlement and social organization of the tribal communities whose members constitute the volunteer family units of the ujamaa. This is particularly important with respect to the pastoralists, who lack clear-cut nuclear settlements and the kind of social organization and production systems associated with them. In any case, the "social amenities" (IBRD-IDA 1973:6, Annex 1) of the livestock development program were, in the stated objectives of the government and the development program, to be furnished by moving the target population--the "beneficiaries"--toward ujamaa village settlement. The impetus toward ujamaa was particularly strong in the late 1960s and early 1970s, when the program was conceived.

B. History of the Development Program

The writer was furnished with the following project documents concerning the Tanzanian development program in livestock and ranch production.

The first and earliest project is called here "Phase II," and the key document is designated as IBRD-IDA 1973. This is a World Bank "appraisal" paper of the "Second Livestock Development Project," which we shall refer to as "Phase II," as we did with respect to a similar program structure for Somalia and Kenya. This World Bank project was evaluated in 1977, toward the end of its official tenure, and the World Bank evaluation report is designated IBRD-IDA 1977.

The second project to be considered was funded by USAID and called the Tanzania Livestock Marketing and Development Project. It was begun in 1974. The USAID "project paper" is missing, but we have the evaluation report on the project issued in 1979 by a consulting firm (A.L. Nellum Associates): USAID-Nellum 1979.

A third project is another World Bank-funded venture, the Tanzania Dairy Development Project: IBRD-IDA 1975. However, this project will not be reviewed in the present paper, since it has little relevance for the pastoralist problem.

The fourth and last project is another USAID venture: the Masai Livestock and Range Management Project, inaugurated in 1969, but more intensively pursued in the mid-1970s with expanded funding. The project operated continuously from 1970 to late 1979 or early 1980, and elements of it are still under way with Tanzanian government sponsorship. In fact, since this project represents the heart of the Tanzanian effort to promote economic development via social reorganization, the AID and Bank funding of segments of the program represent only a part of the effort. Consideration of the issues associated with the Masai program will be divided between this section of the paper and the part to follow, which is devoted to a specialized analysis of the group ranch concept and includes materials from Kenya as well. The document available for the Masai project is an AID evaluation report prepared by a consulting firm, Devres Incorporated, and is designated as USAID-Devres 1974A.

It should be noted that both AID and the World Bank were involved to varying degrees in all of the projects represented, even though major funding was provided by one or the other agency. As with Kenya and Somalia, the congeries of projects make up a program beginning in 1969 or 1970 and continuing until the 1980 period, when international development agency funding for East African livestock projects came to a close or was sharply curtailed.

C. The Livestock Development Program: Phase II

The original livestock program for Tanzania began in 1968 or 1969 and included a number of projects financed by the World Bank. The objectives of these projects were organizational: "five large scale National Agricultural Company (NACO) ranches are being developed. Government's original request comprised continued NACO support and substantial development of Ujamaa and ranches sponsored by the DDCs (District Development Corporations) together with a Foot and Mouth Disease (FMD) vaccine production plant, and marketing and processing facilities" (IBRD-IDA 1973:1). As the original projects came close to implementation in the late 1960s or early 1970s, the government commenced its slowdown on fostering ujamaa communities, due to the difficulties experienced by these experiments. The Bank teams also recommended de-emphasis of the DDC ranches as well, and felt that the vaccine plant could not be justified in terms of its minimal use. Therefore, for Phase II, the Bank decided that the task would be to give NACO and its government-operated ranches strong support; inaugurate important new projects dealing with livestock marketing and meat processing; and provide limited support for the further development of ujamaa and DDC ranches.

The first credit advanced by IDA for the livestock sector amounted to US$1.3 million to cover about 65 percent of a ranching project with a price tag of US$3 million. The project "aims to increase the output of beef, expand the development of improved breeding stock, and demonstrate the advantages of modern ranching techniques by developing five cattle ranches and a training program for ranch management" (IBRD-IDA 1973:8).

The Phase II World Bank project, in detail, would include:

a) development of 11 NACO ranches, 4 DDC ranches, and 22 ujamaa cooperative ranches;

TABLE 11

Allocation of Funds for Phase II: Tanzanian Livestock Development

	COST (Tsh'000)	COST (US$'000)	DISTRIBUTION OF TOTAL PROJECT COST (%)
Ranches			
NACO	52,030	7,287	30
Ujamaa	15,268	2,139	9
DDC	18,352	2,570	10
Subtotal	85,650	11,996	49
Livestock Marketing			
Markets	4,571	640	3
Stock routes	6,236	873	4
Holding grounds	9,768	1,368	5
Subtotal	20,575	2,881	12
Meat Processing			
Mbeya plant	12,170	1,705	7
Shinyanga plant	13,269	1,858	8
TPL plant	10,937	1,532	6
Headquarters	182	26	-
Subtotal	36,558	5,121	21
Technical Services	11,288	1,581	6
Price Contingencies	22,248	3,116	12
Total	**176,319**	**24,695**	**100**

SOURCE: IBRD-IDA 1973:15.

b) development of 3 large markets, 10 medium-size markets, and 20 small markets and the remodeling of 104 small existing markets;

c) development of 2,300 km of new stock routes and 2,200 km of existing stock routes and establishment of 4 new holding grounds and improvement of 23 existing ones;

d) reconstruction of one meat processing plant (TPL) and the construction of two new ones; and

e) provision of technical services, training, and project preparation.

> 3.02 A Project Management Unit would be set up in the Ministry of Agriculture to coordinate and supervise Project operations; TRDB would be the main credit channel and two new companies would be established to handle livestock marketing and meat processing [IBRD-IDA 1973:9].

The total cost of the project was estimated by the World Bank at US$24.7 million, of which US$11.3 million, or 46 percent, was used for foreign exchange requirements. The allocation of funds to the components of the program are given in table 11.

The table shows that 49 percent of the funds were used for ranch development, with the majority (30 percent) for the government-operated NACO ranches. Marketing and meat processing received 33 percent of the funds, with technical services and contingencies, 21 percent and 12 percent, respectively. Thus, 63 percent of the funds went to government organizations: the NACO and the Tanzania Livestock Marketing Company, the government agency in charge of the marketing segment. As with the Somalian and Kenya projects, the Phase II program was in essence a matter of creating and supporting bureaucratic organizations, e.g.:

> Funds for ranch development, livestock marketing and meat processing through TRDB to final beneficiaries. Government would make its contribution (28%) through NAFCO as its holding company for parastatal ranching (NACO), meat processing (TMPC) and cattle marketing (TLMC) and through DDCs for ranches sponsored by them. Ujamaa members would make their contribution to development costs by providing cattle and labor. Since the Masai own large numbers of cattle, their contribution is set at 20%, but other Ujamaa members would contribute 10%, the amount judged to be realistic having regard to their resources [IBRD-IDA 1973:16].

Additional bureaucratic facilities were also made part of the conditions of the credit. The Bank required that the government establish a "policy committee" to be chaired by the "Principal Secretary, Ministry of Agriculture, and with representation from Ministries and institutions involved in the Project. The Project Manager would be responsible to the Principal Secretary . . . " (IBRD-IDA 1973:18-19)--and so on through a list of assistants in charge of the various components. This structure was explicitly designed to by-pass the Tanzanian Rural Development Bank (TRDB) which had charge of the Phase I funds and was the object of criticism for financial mismanagement. However, TRDB would remain the principal channel for the funds passing to NACO and other ranches, providing that its bad record on overdues (delayed repayments on loans) could be rectified (IBRD-IDA 1973:19). There were numerous other provisions and qualifications justified on the basis of Phase I difficulties.

Before we describe the program evaluation, some details on the government organizations are necessary. The National Agricultural Company was the earliest of these, being the first Tanzanian parastatal entity charged with the responsibility of administering development funds and programs in agriculture. This organization also operated the government cattle ranches, but in Phase II was replaced by the National Ranching Company (NARCO), due to the inefficiency

and apparent financial mismanagement of NACO. The Livestock Development Authority (LIDA) was made responsible for the direction of Phase II in 1975, replacing the Livestock Division of the Ministry of Agriculture, which had been mainly responsible for the management and planning of Phase I. The role of the TRDB has already been noted; it was responsible for funds disbursement in Phase I, but was replaced by the committee noted previously. However, as we shall note, LIDA developed problems by 1976, and further reorganizations were required. Other organizations involved in the program were the Tanzanian Livestock Marketing Company, the Tanzanian Meat Processing Company, and parastatals for transport and other functions--the usual spectrum of government-sponsored or controlled companies which proliferate in international agency-funded programs in African countries--and perhaps especially World Bank projects, where repayments of credits and loans require the accountability of a company with its profit and loss operations.

We also require some data on the three types of ranching organizations in Tanzania:

1) The District Development Corporation Ranches (DDC).

These four ranches supported by the Phase II program were located in districts selected by the government as targets of intensive development of regional governmental authority or decentralization--the first steps in Tanzania toward true local governing bodies. The ranches were essentially government-operated cattle ranches similar in structure to the NARCO ranches to be described next. However, their control was vested in the regional District Development body, and this made a considerable difference, as we shall see.

The DDC ranches averaged around 40,000 ha; the typical ranch had about 2,200 head, with 1,500 cows, 30 bulls, and 675 heifers. In 1976-77, the typical ranch sold about 2,500 fat steers, all to local butchers in the District. Most ranches were located in sparsely populated portions of their districts, where competition for land was minimal.

2) The National Ranching Company Ranches (NARCO).

These were begun in 1968 or 1969 in the World Bank Phase I program. The operation was a direct result of Julius Nyerere's publicly stated belief that government-operated facilities would be needed to supply cattle for export, tourism, and also for critical food needs during a period of national transformation. At the time, government was conceived, not as an independent bureaucratic entity, but simply as an extension of the will of the people, in accordance with socialist ideology. The ranches were originally under NACO, as previously noted, but were given their own organization in 1974 (and were virtually bankrupt by 1976, of which, more later). A total of 12 of these ranches were operating in Phase I, and 6 were added in Phase II when the decision was made to foster this form of production.

3) The Ujamaa Ranches.

These originated as an opportunity to make use of the ujamaa philosophy for the organization and improvement of livestock production and the

pastoralist population. Thus, two objectives might be served: the livestock output of pastoralists would be controlled and enhanced; and the peoples themselves would be induced to settle down in villages. Ujamaa seemed an ideal solution--the solution everyone in Eastern and Western Africa was seeking to the pastoralist problem.

Fifteen such ranches were funded by the World Bank projects. Most were relatively small "village" units, with 50 or 60 cattle-owning families in each, most volunteers. Most ujamaa ranches were formed out of members of mixed farming communities or transhumant pastoralists; only 2 or, at most, 3 were formed out of Masai true migratory pastoralists, and these tentatively, as experiments. However, such classifications into sedentary or non-sedentary producers in northern Tanzania are deceptive. The region has been one of considerable transition and mixing of production styles: many Masai groups have continued to farm intermittently or even routinely; many village people move with livestock almost as often as the Masai or Gogo; and so on. In general, the ujamaa ranches were viewed as a way of stabilizing human and animal settlement in varying degrees for different communities.

D. Critique

The criteria for deficiency or failure for a particular project within the program were based on the structure of the development effort. For example, commenting on the relative success of Phase I (1968-1971, roughly): "The Project was generally successful in achieving the planned ranch development and the build-up of the National Agricultural Company (NACO)" (IBRD-IDA 1973:1, Annex 1). That is, the objectives of the program were to construct government supervised or sponsored organizations of various types. Continued development (and rescue) work on the organizations created in Phase I, with new organizations added: 6 NARCO ranches, 4 DDC ranches, and 2 or 3 new ujamaa ranches. In addition to these ranches, Phase II was supposed to: develop 33 new livestock markets and remodel 104 existing ones; construct 4 holding areas and 2,300 km of new stock routes; improve 2,200 existing routes; establish a new organization, the Tanzania Livestock Marketing Company (TLMC); renovate the Tanzania Packers' Ltd. (TPL) meat plant and construct 2 new meat plants; and establish the Tanzania Meat Processing Company (TMPC).

In addition to these tasks, the Phase II brought into Tanzania a considerable quantity of heavy machinery and other equipment to build roads, markets, holding pens, meat factories, and facilities for tsetse fly control.

Thus, as is the case with the Kenyan and Somalian projects, the criteria for evaluation mainly concern the vitality and productivity of organizations and construction projects. The project appraisal paper reviewed the accomplishments of Phase I in this light; i.e., not with reference to gains or losses to the general population or to the producers of livestock. The later Phase II evaluation is also concerned mainly with the bureaucratic operations of the companies and ranches, but it does note that the benefits for the producers and populations involved in livestock were not realized. Such critiques are, of course, expressed indirectly, as failures of the project to achieve the projected rates of return or income gains. Nevertheless, some attention

is given to the presumed beneficiaries; it is really the easiest criticism one might make of these projects, since none of them came close to the predicted benefits.

On the other hand, a large number of Tanzanian bureaucrats received salaries from these companies for a number of years, and most of them probably continue to do so. In 1980, all of the organizations described in the 1977 report as "virtually bankrupt," nearly defunct, and so on, were continuing to employ agents and occupy offices in government buildings.

The organizational bias of the program is indicated in the evaluation report (IBRD-IDA 1977:1, Annex 1), where it is noted that Phase I was a success "in achieving planned ranch development and the buildup of the National Agricultural Company (NACO)." Since much of the remainder of the Annex is devoted to describing the failures, inefficiency, and corruption of NACO, the reader is required to at least question whether the construction of such parastatal companies in nations with severely limited managerial skills is the ideal route to development.

The following are described in the 1977 evaluation report as the "main issues" (1977:6-7, Annex 1):

1) The **ujamaa** ranches were not progressing according to the plan and had departed from their original conception as a means of organizing dispersed population into village settlements. All of the **ujamaa** ranches had been established by the government in densely populated areas, and thereby constituted enclosed grazing areas in districts already short of adequate pasturage. Hence, the evaluation report observed that IDA credits were being used to finance cattle purchases in overgrazed areas. This criticism was leveled specifically at TRDB, was was one of the reasons that led to the decision to divert it from program management--although it was given disbursement duties.

2) The Tanzanian Meat Processing Company had major problems and its viability was seriously threatened. The cattle supply was insufficient to maintain a profitable volume, and the plants, as constructed by the WB program and personnel, were too sophisticated for the available managerial personnel to handle. In late 1977, bankruptcy was predicted.

3) Management problems were singled out as a "main issue" in their own right. The entire project "lacks guidance, coordination, and control" (IBRD-IDA 1977:7, Annex 1).

Following these "main issues," come the "specific problems" (IBRD-IDA 1977:7-13, Annex 1). We select the following for description and comment:

Out of the grand total of 15 **ujamaa** ranches that accumulated in both phases of the program, only 3 had actually begun stocking cattle during the Phase II period of operations being evaluated. All of the ranches had stocking problems of one kind or another: some understocked, some overstocked at the time of observation. This was evidence that the "ranch" conception was simply not taking hold among transhumants or pastoralists: the ranches were being used more as holding areas, and the herds were being manipulated by their former or

appropriating "owners" despite the official designation of the herds as communally owned.

In fact, the chief problem found by the evaluation team with respect to the **ujamaa** ranches concerned the fact that the members were allowed to continue to own private herds of cattle in addition to those they contributed to the communal herd. These privately owned animals were being grazed on the **ujamaa** land, and the member took full advantage of dips and other facilities (see IBRD-IDA 1977:3, Annex 3). Thus, the concept of **ujamaa** had simply not been communicated, nor was it being institutionalized: the ranches were opportunities for "free riders" in the sense of Moncur Olson's classic analysis of the "public goods" problem in organizations like labor unions or cooperatives.

The two or three ranches which might be described as wholly Masai in membership had the lowest heifer stocking rates of all--an indication that the Masai were probably interested in accepting the **ujamaa** ranchland as property, and securing the free bulls and ranches they were given, but without accepting the production scheme or social obligations involved.

In the literature on the Tanzanian community experiments, a certain amount of confusion has emerged with reference to the nature of these entities. The program of communal settlements was given a final legal status by the Village Registration Act of 1975, which required villages to register with the government as communal settlements if they so chose (or could be persuaded to do so by the government agents). Registration of a village meant that it accepted the idea that all <u>commercial</u> production henceforth must be communal, i.e., carried out collectively and the proceeds shared equally. That is, **ujamaa**, or at least village registration, did not require subsistence production to be communal. So long as livestock producers continued to gain some or most of their subsistence from the animals, they would be entitled to keep private herds. At any rate, the situation meant that all **ujamaa** ranches had this problem to some extent, and by 1977, serious overgrazing was the common condition.

(As we shall note in the next main part of the paper, attempts to combine collective and private ownership in livestock production have generally resulted in failure and resource abuse.)

In addition to abuses by the ranch members, villagers not members of the schemes were also using ranch pasture for their own herds. In many cases, it might be assumed, on the basis of ethnological data, that these non-ranch people were kinfolk of the members.

Ranch members were also found to be ignoring the Tanzanian Livestock Marketing Company as an agent for sales and for purchase of stock. Low government prices for beef made it difficult to pay adequate prices to Tanzanian farmers and pastoralists who had private buyers, and especially in the north, where Kenyan merchants were inducing farmers and pastoralists to "smuggle" cattle across the border. At the same time, the company was charging higher prices for cattle bought from it by the producers for beeeding, feeding, etc., than they needed to pay in local markets. Since many of the ranches (not so

much the ujamaa, but the NARCO and DDC) were required to buy from the TLMC by the terms of the scheme, this meant that book losses on animals were common.

Problems observed for the Livestock Development Authority (LIDA) were described as follows. First, the organization was another replacement: in 1974, it substituted for the National Agriculture and Food Company (NAFCO) since the latter organization had experienced serious management and financial problems. LIDA had been founded as the main controlling or management body for Phase II. However, the evaluation team cited it for bad planning, in particular, for persuading NARCO to add three or four additional ranches to the list for development, even though none of the government ranches were doing well and were a financial drain for NAFCO and LIDA. LIDA was anxious to add ranches as a way of possibly helping the organization recoup some of its losses. LIDA was also accused of overstaffing, due to its use as a source of jobs for relatives of government employees. Finally, LIDA failed to use its own authority to persuade the government to support it adequately. Various government officials, with special interests in private marketing and butcher businesses persuaded LIDA to divert many of its animals to these facilities, at low prices. These and similar criticisms form a picture of a rationalistic organization set in a new society with an array of new vested interests and power groups, all eager to obtain their own benefits and making use of the organization to do so. The problem is a familiar one: these parastatals are established in Third World countries with expectations of performance based on ideal Western standards; yet when they perform at <u>local</u> standards--not yet evolved sufficiently to meet external norms--their performance is adjudged a failure.

Another criticism from the 1977 report: The Transport and Facility Company (FLTC), established to move cattle, construct holding pens, and the like, was judged to have done a relatively poor job, due to poor maintenance, breakage of equipment resulting from bad crating and handling, and the lack of any method of recording inventory. Still, the report's criticisms of this organization were less strong, and there is the evident possibility that purely technological missions of this kind are perhaps more easily met than the organizational, which are much more deeply involved in social and power systems. The criticisms expressed of these organizations in World Bank evaluation reports are a litany of failure and pessimism, but at least with respect to these livestock project reports, one never encounters a realistic assessment of the fact that the plans and designs were far too ambitious to begin with, considering the level of social and educational development of the countries. On the other hand, it is possible to argue, following Albert Hirschman (1967), that the tendency to plan big is a desirable one, given the uncertainties in the situation. Moreover, big planning may be necessary to instill enough enthusiasm or commitment to obtain fulfillment even at modest levels.

Some additional "specific problems" with respect to the <u>ranches</u>:

The stocking-up process lagged through the 1970s on all the ranches, but especially NARCO and the pastoralist ujamaa units. The familiar "negative price response" of pastoralists (or all livestock producers, for that matter) triggered by drought was considered to be the cause. In 1976, the extended drought in Tanzania had resulted in considerable loss of cattle, and this was blamed by some interim (1971-72) World Bank evaluation examiners as the main

cause of poor stocking rates. However, the 1977 team determined that on the two ranches with the worst stocking rates, no stock reduction in response to drought or with regard to pasture conservation took place until after the drought was broken, or at least until very late in the drought period. This suggests that the ranch management was thinking in pastoralist terms: never de-stock for drought since you may need the animals for subsistence or for herd re-building when the drought is over.

Moreover, in fear of private herd losses during the drought period, the government ordered--required--pressured--the NARCO ranches to buy cattle at high prices in order to benefit farmers and pastoralists. The total NARCO losses from June 1975 to June 1976 totaled 5.5 million Tanzanian shillings (a cumulative loss for the previous six years or so of 30 million), 7 million of which was the price paid by NARCO for farmer and pastoralist cattle during the drought relief program. This is considered by the Bank team to be a fault, and NARCO is blamed for permitting such practices. However, in the face of political pressures for producer relief, the government may have had little choice in the matter. One might argue that in the transitional situation represented by the agricultural industry in Tanzania, the creation of government and development-funded companies can be at least partly justified by using them in such emergencies. The fact that the Bank is concerned for financial probity due to its concern for repayment of credits, is another example of the imposition of outside standards on a transitional society.

The one ray of light in the entire ranch situation in 1976 and 1977 was the DDC ranches, who were judged in the evaluation report as enjoying moderate success on all fronts: stocking, feeding, selling. These ranches were established to "improve the local meat supply" (1977:1, Annex 2) and not to improve the tourist or export supply business, and were operated, as we noted earlier, by district development authorities. All steers finished on these ranches were sold to local butchers at local--that is, government--prices plus whatever minor local adjustments were necessary. The success of the ranches was due to these practices, which put them into the local food chain; and also to the fact that they were all located in sparsely populated areas which had no competition for pasture, or where land tenure was not in dispute. "This type of assistance (local support) contributed greatly to the morale but also to the profitability of the ranch" (1977:4, Annex 2).

One of the most important and useful parts of the IBRD-IDA 1977 evaluation report concerns its attempt to relate a number of variables that were never adequately interrelated in development planning. These concern the relationship of the ranches to the density of the human and livestock populations, and the relationship of these variables in turn to the type of ranch established by government and/or the development program. The team distinguished four situations:

1) High densities for both human and livestock populations.

2) Low densities for both human and livestock populations.

   (These were the types of areas selected in the project appraisal paper as ideal for new ranch development, but were not selected by the government, save for the few DDC ranches.)

3) Areas without previous livestock herds.

4) The special case of the Masai ranches.

(These pastoralists were expected to conform to intensive production standards.)

The high-human/high-livestock density situation was encountered in nearly every one of the **ujamaa** ranches. However, not all of the so-called "**ujamaa** ranches" were, in fact, based on **ujamaa** villages. As we noted earlier, the ubiquity of the "**ujamaa**" term often conceals a complex situation in which villages may have agreed to enter the process of **ujamaa** (which is really a matter of turning themselves into a multi-purpose cooperative with communal-property trimmings) but remained a long way from attaining that status. This stage is equivalent to what is called a "Registered Village." The evaluation report recommended that attempts at establishing communal herds--which then compete with the private herds of the members--be replaced with what is in essence a **grazing cooperative** (not a quote: author's term) in which all the livestock would be owned individually, but would be managed as a unit, with employed managers, stock limits, etc. These would be established in Registered Villages, which have the flexibility. Whether this scheme would obviate some of the difficulties found with **ujamaa** ranches would remain to be seen, but the writer hopes it has at least been tried.

With respect to the Masai ranches, recommendations will be considered in the next main section of the paper. Briefly, the problem is seen to be the need for more extensive involvement of the Masai themselves in the planning and management of any ranch based on communal or cooperative lines, and their right to advise on particular forms of organization and management, adapted to their own social organization. Obviously. What more could one ask?

With respect to the NARCO ranches, the 1977 evaluation report is a kind of chamber of horrors, with everything from implied embezzlement to cattle thievery:

> . . . the lowest weaning rates occurred not on ranches affected by drought
>
> . . . "unacceptable" low per-cow costs of production--considered to be much too high for extensive cattle production
>
> . . . bureaucratic milking (the term is the present writer's) of the organization by the government; i.e., using it as a source of funds, employment, etc.
>
> managers were poorly trained, were given some courses at the university, but these were mainly concerned with technical matters of livestock, and not with the economic and managerial aspects of large organizations
>
> . . . obvious theft of pre-weaning calves. This was considered easy to do because of the method of record-keeping: the reports simply reported the total number of calves each month; hence, it was a simple matter to under-report by a few each month; these animals possibly being appropriated by employees or their relatives.

These criticisms are selected from Annex 6 of IBRD-IDA 1977, concerning the NARCO ranches. This part of the report is 26 pages in length. The report on the DDC ranches, which were considered reasonably successful, was given five pages. The Bank was obviously deeply concerned with the NARCO situation, which was approaching a fiasco in Bank terms. Since the predecessors of NARCO had been scrapped due to dishonesty and financial failure and the ranches identified as inefficient, the Bank's decision to support NARCO ranches at a high level of funding in Phase II is difficult to defend on their own standards. By other standards, hinted at in this paper, they may well have served socially useful (if not economic) purposes.

We turn now to a document which is in part an evaluation of the evaluation: a report commissioned by USAID in 1979 to study the marketing aspect of Phase II.

E. The Tanzanian Livestock Marketing and Development Project

Funded by USAID, this was a segment of the World Bank program described previously; specifically, the USAID-funded portion of the projects in Phase II. IDA also contributed funds to the marketing program, as already noted; USAID made additional contributions. Since we lack the original USAID "project paper" for this segment, we cannot report on the USAID dollar contribution to the program. The World Bank increment, as reported on table 11, was US$2,881 million, or 12 percent of the total project cost.

The initial paragraph of the USAID evaluation report (USAID-Nellum 1979:2) reads as follows:

> The original project goal stated in the Project Paper has not been achieved nor could it be achieved under the project as designed. The project purposes of establishing an effective marketing system in Tanzania through the TLMC (Tanzanian Livestock Marketing Company), implementing the range management and water development aspects of IDA Project Phase II, improving the operation of LIDA, and completing a livestock subsector analysis do not generally contribute to achievement.

While this succinct summary contains reference to portions of Phase II we chose not to describe in the previous section, the implications of the critique are clear enough: the USAID evaluation team considered that the World Bank focus on organizations rather than the producer segment created a self-defeating situation, or rather, a built-in propensity to failure.

At the time of the evaluation, the USAID marketing segment had one more year to run with available funds (plus a recommended one-year extension on which we have no information). The evaluation was designed to suggest improvements in the project which might contribute to some degree of success; that is, it was not terminal.

The criticism of the IDA Phase II is direct, and there is acknowledgement that IDA is also aware of its mistakes (USAID-Nellum 1979:8). The essence of

the criticism concerns the inconsistency between the two key elements of the Logical Framework: goals and purposes. I.e., the "livestock subsector goal" was to "assist the Tanzanian Government achieve its objective of self-sufficiency and an exportable surplus in the livestock subsector, to the direct benefit of 125,000 traditional and small producer families through improved earnings and more than 1,500,000 urban and non-cattle producing rural consumers through improved nutrition from an adequate beef supply at an equitable price" (USAID-Nellum 1979:7). However, the report states that the explicit purposes of the project were inconsistent or contradictory with respect to this goal; i.e., the various projects concerning ranch development, marketing, and managerial assistance had negative effects: they increased the costs of marketing; disrupted traditional markets; did not increase an exportable surplus of cattle. The main accomplishment appears to have been the increase of employment in the parastatal organizations (USAID-Nellum 1979:9).

In the recommendations produced by the 1977 World Bank evaluation team, some of which we have reviewed in the previous section, attention was given to the need for a research project designed to discover the "attitudes and practices of the traditional producers"; the 1977 report recommended that project activities cease or be curtailed until this could be done IBRD-IDA 1977). The AID-Nellum team disagreed sharply, noting that neither the IDA appraisal paper nor the 1977 evaluation team appeared to be aware of the extensive anthropological, economic, and range management literature concerning these traditional practices (p. 10): the teams "could be criticized for failing to study the literature" (IBRD-IDA 1977:10).

The logic of the World Bank approach to the livestock development problem in Tanzania and elsewhere (an approach shared, on the whole, by USAID in the early 1970s) was simply that "there was no shortcut from the minimal standard of productivity of African herds under African conditions to those generally known in Europe or, it might be added, in America" (USAID-Nellum 1979:13, initially quoting the IDA appraisal paper). That is, the way to increase livestock productivity was to imitate Western practices, which means stratified production beginning with intensive ranching, through distribution of immature animals to various segments of a feed-finishing industry, and thence to markets. Since the African countries lacked an indigenous infrastructure of this nature (or had only segments of it, weakly developed, from the Bank's point of view), it was necessary to create it. Since the national government constituted the only responsible or available organizational authority in African countries which had just emerged from colonial status, these organizations would be established as government-controlled or sponsored companies--"parastatals."

The IDA Phase II (in apparent agreement with President Nyerere) assumed that an increase in cattle production could be obtained by cultivating a new ranching industry, bypassing, or perhaps supplementing traditional livestock production. On the other hand, if better markets, stock holding areas, and roads were created, the traditional producers would be induced to sell more of their cattle, providing another increment to increase offtake of both immature and mature animals. The export market, valued by the Tanzanian government, would be served by creating a new meat processing--packing and canning--factory and making improvements in the existing plants.

USAID entered the field in the early 1970s with a project designed to backstop the IDA program by improving marketing facilities (the project we are concerned with in this section). In the background of this project was the awareness that the government-enforced low prices of livestock, designed to keep the price of meat low for consumers (especially in the cities) had given "the traditional producer little incentive to increase his production or his offtake" (USAID-Nellum 1979:14). However, in spite of this price constraint, the cattle population of Tanzania nearly doubled during the decade of the 1960s. Many of these animals were retained in traditional producer herds, to serve subsistence, sales, and social-symbolic purposes, but many were sold through existing marketing channels. Hence, the new marketing facilities were insufficiently patronized (and the ranches poorly stocked).

This seemingly contradictory situation came about through the operation of economic forces out of the control of the government and its new marketing and ranching facilities. Since the offtake on official markets is low--around 3 percent on the average, over time--the excess cattle must have passed through other markets: the Nellum evaluation team assumes that an additional 3 percent bypassed the new markets and that another approximate 1.5 percent is sold directly in villages and country marketplaces. Much regional variation exists, depending upon available pasturage, local moisture supply, disease, and other factors. The fluctuation of the cattle population is also subject to variation in other agricultural products: when maize harvests are good, the cattle population increases; cotton seems to have similar effects, suggesting that cash income from farming affects the ability of the local populations to buy meat, and also to maintain farmer herds at desired levels. In the late 1970s, the price of cattle in Tanzania rose, despite government attempts to control it, due to competition from export sales and government projects to reduce transportation costs (roads, etc.). This has meant that the price of meat in the domestic market is to some extent established by the price of corned beef and other exported meat, and also by the higher prices for cattle in neighboring countries, whose markets have absorbed increasing numbers of Tanzanian animals smuggled across borders.

Thus, the peculiar paradox emerged: while the artificially low price for cattle depressed sales for a time, the rising demand prices encouraged them. But the producers did not provide the needed number of animals to supply the parastatal marketing and organizations with the numbers of animals for sale or for breeding and feeding stock they required to operate a profitable business and repay the investment made in them by the development agencies and the government. Thus, the producers do respond, overall, to increased sales opportunities by increasing their herds and selling animals, but the traditional modes of production, which include cattle as wealth and subsistence, plus the existence of many types of traditional markets, do not permit the animals to flow through official and record-keeping channels in a regular or predictable fashion.

Despite the predominantly negative findings of the evaluation teams with regard to marketing projects, the Nellum team did not recommend scrapping the system in favor of the existing traditional one. That is, the basic objectives held, despite the evident distrust of the Logical Framework on which they were established. This approach is not as contradictory as it sounds, since the

Nellum evaluation also found that the activities of the TLMC and its many facilities had made a difference in the economic value of cattle and the incentives of the producers. The collapse and withdrawal of the government's attempts to control meat prices, plus the increases in demand noted previously, "brought to the person presenting the cattle in the primary market a greater share of wholesale and retail value" (USAID-Nellum 1979:30). Part of this increase in value was created by improvements in roads, holding areas, emergency purchases in periods of drought, better watering facilities, and so on. The main point, however, is that official government buying and marketing of cattle has not been a success; it was the "primary market," i.e., the traditional village marketplace, itinerant buyers, clandestine exporters, and the like, that served the demand. This put the TLMC in the middle: it was having some effect, but if its performance had to adhere to World Bank standards, and do so over a short period of time, the company would have to be judged a failure--as the 1977 evaluation did so judge.

This may suggest that, as time passes, commercialization of livestock production evolves on indigenous patterns as the nation grows stronger. This process of evolution is only partly subject to the directives and incentives of planned institutional or organizational change.

The main recommendations of the USAID-Nellum team were as follows:

- Attempts to control market prices of livestock should cease, or not be resumed.
- Attempts should not be made to coerce the producers to sell in the official markets.
- Cattle grading--one of the objectives in Phase II as part of the marketing projects, should be introduced informally, or rather unofficially at first.
- Methods of communication of information on desirable livestock production and marketing methods should be instituted, including news media, price reports, need for better care of animals, visual aids, and more intensive extension services, and the like. (This was seriously neglected in the livestock projects throughout eastern Africa, as we have observed elsewhere.)
- The attempt to develop appropriate livestock and range management procedures on all of the 37 ranches of different types in operation as a result of Phases I and II of the program should be abandoned, and in its place, a focus on one or two ranches, to develop them as models for the rest. Information and education activities could use these models in extension work as an example for the others. The same strategy should be used on water development along stock roads and holding areas: focus efforts on one or two.
- Further efforts to improve managerial and accounting procedures in TLMC should be made and the Tanzanian government programs to do this should be supported. The same is recommended for NARCO. Both organizations appear to have made progress in better management since the 1977 report.

F. The Masai Livestock and Range Management Project

The style of presentation of this development project will differ from the preceding since many of its specific problems and deficiencies have been treated in other project analyses. In many respects, the Masai project was a bellwether for other livestock projects involving migratory pastoralists in eastern Africa, and the project attracted a good deal of professional interest from anthropologists, range specialists, resource people, livestock management technicians, and veterinarians. USAID considered the project a crucial one; thus, the project was used as a locus for a number of research and interim evaluative studies, some of which have been published in professional journals in various fields. A reasonably complete bibliography can be found in the bibliographical section of the 1981 Nairobi conference report volume, edited by Galaty, Aronson, and Salzman (1981). Others are contained in the reference citation bibliography attached to the present paper.

The Masai people are probably the best known pastoralist tribal group in Africa. Originally inhabiting most of the central and southern portion of Kenya and all of northern Tanzania (i.e., the prime range areas of East Africa), they were in a process of expansion at the time of European contact in the mid-nineteenth century. As already related, both the British and the German occupations of the Kenya-Tanganyika region included attempts to "pacify" them and measures designed to restrict their grazing areas. In general, these efforts did not cease with the independence of Kenya and Tanzania, although it has taken different forms. In essence, the effort included four approaches: first, an attempt to restrict grazing often by indirect methods of permitting agricultural settlers to move into range areas, or by preventing grazing in the game parks. Second, attempts to clarify land ownership and tenure by assigning grazing areas called "ranches," under varying administrative arrangements--group ranches in Kenya, village ranches in Tanzania, etc. Third, encouraging sedentarization through the granting of social services at designated points, with the intention of promoting settlement. This, too, has taken different forms in Kenya and Tanzania, depending on national attitudes, ideology, and legislation. A fourth set of measures has concerned the improvement of animal husbandry by a variety of means, including veterinarian and other animal health measures, better marketing facilities, and various means to encourage offtake, especially of younger animals, in order to assist in the development of a stratified production regime.

The accomplishments in all of these fields were meager, according to evaluation reports of the various projects. Yet, there have been some accomplishments, and there is evidence that the Masai themselves are changing, sometimes in the directions desired in the project purposes and goals, sometimes in other ways. The effort to change Masai ways--both economic and social--has been massive in the sense that a large number of projects have been attempted; but it has been minimal in the sense that none of these projects--World Bank, USAID, and the country governments--have effectively incorporated the Masai themselves into the planning and execution. In short, while the Masai have been the targets of many development schemes, in many respects they have been only tangentially touched by these schemes. They constitute a case study in the basic deficiencies or misconceptions of the "project" approach to structural economic and social change in the developing countries--and especially,

of the attempt to convert migratory pastoralists into sedentary livestock producers of beef.

1) **History of Project.** The Masai program under consideration was the mainline effort of a series of projects enjoying support from a variety of development agencies and governments. The program was supported for a period of 10 years by USAID and cost a total of US$10 million from its inception in 1969-70 to the terminal evaluation and close of the project in 1979. USAID's discouragement with the general results of the project was a major factor in bringing the agency to sponsor a number of conferences and research studies, like the 1979 Harper's Ferry Workshop (Institute for Development Anthropology 1980). The document available for the present analysis is the terminal report on the project, performed by the Devres consulting firm, and referred to as **USAID-Devres 1979A**.

The program included separate projects designed to improve range and livestock management; control diseases; assist in development of security of land tenure; train Tanzanian specialists; develop training for Masai and Tanzanian livestock and range officers; assemble baseline data on all facets of Masai population, economic life, and range conditions, climate, and other aspects. The anticipated benefits were to improve the well-being and "quality of life" of the Masai by raising income and by helping them establish village life. The Tanzanian Masai numbered about 156,000 persons in the mid-1970s; the project estimated that about 110,000 of these lived "almost entirely on livestock and livestock products" (USAID-Devres 1979:2).

The project's Logical Framework and the specific goal were similar to all other projects reviewed: "to assist the Tangov in attaining its objective of self-sufficiency in livestock products and an exportable surplus to earn foreign exchange" (USAID-Devres 1979:2). The sedentarization of the Masai and the desire to integrate them into national life by helping them commercialize their production and providing them more easily, thereby, with social services (education, health, etc.) would presumably follow from accomplishment of the economic purposes.

Annex 3 (pp. 102-109) of the terminal report is the longest and most detailed Logical Framework document in all the eastern African development projects for livestock. It contains a total of 41 "Objectively Verifiable Indicators" of "goal achievement" and 38 "Important Assumptions." Of the assumptions, about 25 are distinct; the others are duplicates cited more than once for particular goals. In our opinion, the crucial assumptions were those presented on the following page (paraphrased and renumbered from pp. 102-109):

This list could be extended; no single assumption in the long list turned out to be completely valid. Many of them were really facets of the same issue; for example, about five assumptions related to project personnel, technical equipment, prompt delivery of funds, and the like. All of these proved to be a source of frequent and persistent difficulty. In a project as ambitious and as delicately balanced as this one, even slight delays or failures might prove crucial for a particular objective.

The list of "verifiable indicators" had the usual problems associated with migratory pastoralist projects, as discussed in the Somalia and Kenya sections

TABLE 12

Assumptions: Masai Livestock Project

ASSUMPTIONS	PERFORMANCE
1. No climatic or other natural disasters would occur during project.	1. A severe drought occurred almost immediately; was not anticipated in project design.
2. The Tanzanian pricing system will "function properly."	2. It did not; numerous problems existed, including livestock-meat price controls.
3. The Tanzanian government will furnish necessary support and personnel.	3. Continual problems with inadequately trained and insufficient personnel, plus negative attitudes toward Masai.
4. No "irresolvable cultural constraints" will prevent Masai from accepting methods of livestock production, management, cash economy, etc.	4. There were many and various such constraints; but more cogently, the Masai lacked confidence in Government efforts, and considered many innovations too risky.
5. The Masai will contribute labor and cost-sharing to the project.	5. They made minimal contributions, and only to those projects they felt were of real value, like the dip construction.
6. The Tanzanian Government will guarantee tenure in the range and ranch areas, controlling further settlement.	6. Several key areas were settled by farmers during project with Government tolerance or support.
7. The Masai will change toward sedentary life when shown the advantages of a ranching economy.	7. No appreciable effect; although some evidence that Masai may be focusing settlement somewhat, for other reasons.
8. The Masai will voluntarily increase offtake of animals and reduce size of herds, when shown advantages of ranching, etc.	8. Did not occur; or if offtake increased intermittently, it did so for other reasons.
9. That the U.S. Government will provide competent project staff.	9. Continual problems and complaints over inadequately trained people and rapid turnover.

of the paper. This was particularly the case for the indicators of improved Masai status, which relied on the usual income, job-opportunity data, number of "villages" or "ranching associations" established, and so on. Some of these, like outside job opportunities, do not measure welfare from the Masai point of view, but are rather an attack on or failure of their own way of life:

> Furthermore, there is proof that up to 200-300 families in the Moipo division of Kiteto had moved into the "Saunyi" area east of Kitivei B, where there are no project or development inputs, in order to "escape" efforts to improve their quality of life. Likewise, such claims [i.e., claims on the part of the Tanzanian government that the Masai have "increased awareness" of their "rights" to village facilities, like wells, schools, shops, etc.] overlook the fact that certain project-assisted inputs stifle Masai efforts at self-help and self-reliance. For example, Tangov policies prohibited Masai fund raising to support dam construction at Monduli Ju [USAID-Devres 1979:79].

The settlements formed under the various projects may have existed, but on the basis of the research reports and the terminal report, most of them did so in little more than name only--so far as their contribution to Masai social change and welfare was concerned.

In two fields, the Masai project could register certain gains from the standpoint of favorable reception from the Masai people:

The first of these concerned the projects involving new facilities for stock watering. In discussions with the Masai, the terminal evaluation team was told that new wells, dams, reservoirs, and tank trucks for emergency distribution were the "Project's greatest contribution to them and it was the project activity they would most like continued" (USAID-Devres 1979A:46). Despite this favorable reception, the evaluation team found faults, e.g., continual delays (the project did not get under way until 1973, and there were no drilling rigs until 1974). "Appropriate hydrologic studies" were not made in advance of the project, and consequently, a number of the borehole wells silted in rapidly. There were other problems; however, the criteria of accomplishment are the project's; so far as the Masai were concerned, whatever was accomplished was a success. Since 59 percent of the original schedule of boreholes was actually dug, such a rate, even allowing for possibly 10 percent error in geological siting and the like, might be considered a satisfactory level of accomplishment in a situation as ambiguous as this.

A second area of relative success, in terms of both actual accomplishment and Masai attitudes, is in the field of animal health. The key items here were livestock dips, of which 60 were constructed, raising the total available in Masai areas of northern Tanzania to 94, about a 60 percent increase over the pre-project period. About 28 million cattle were dipped; almost 6 million sheep, and over 7 million goats during the period of the project. Some Masai traveled long distances to reach dips, and in one district, Masai contributed cash to the construction of dips. During the first two years of the project, Masai paid dipping fees. These services were also supplemented by improved veterinarian services, anthrax vaccine, rinderpest protection, and others, some of them free, others available at cost.

The terminal report fails to mention the fact that animal health measures have been welcomed by pastoralists in Kenya and Tanzania since the days of the British, and that desirable as these may be, they have made a contribution to the increase in cattle numbers which have in turn formed the background for much of the contemporary problem of pastoralist development and change. This does not mean that animal health services should be withdrawn; only that without other and compensatory changes, they can have the usual effects that health measures have had on both animal and human population magnitudes Thus, the attempts to persuade or induce the Masai to practice commercial-level offtake and herd reduction have not had much success; health measures are welcomed in large part because they assist in maintaining the relatively large herds desired.

Despite these relative successes, the animal health program was judged by the terminal evaluation team as unsuccessful (USAID-Devres 1979A:62), because the complete project goals were not met due to administrative problems, shortage of equipment, and so on. Again, the very ambitious goals help to bring about a judgment of failure.

A related problem concerns the difficulty of recording precise accomplishments due to the absence of quantitative studies of the technical aspects of the project: weaning rates; age of first calvings; calf mortality; disease frequencies; herd composition; and four or five other factors which were important in the goal structure of the Logical Framework. Studies of range condition and management practices were not made in detail, although the project did produce one major ecological survey of Tanzanian rangelands. Hydrological research was begun in 1977, but its completion apparently was delayed. Again, these lacunae in data recording are registered as failures, but it should be noted that nearly all of them relate to the overriding economic purpose of the project: to convert Masai herds to commercial standards--a goal which in any event will take much longer than the duration of even this decade-long project, since it involves social structural and value-attitude changes to which the project did not really address itself.

2) Training and Education. The project was responsible for the development of a Rural Training Center, located at Monduli, designed to show Masai how "to use adapted technology to increase livestock production and improve their quality of life" (USAID-Devres 1979A:v). The terminal evaluation team recommended suspension of training sessions until an entirely new plan could be developed. Most of the training courses related to aspects of the project not really relevant to such key areas as dip management and use, pump maintenance, and one or two other key skills. Instead, the Center attempted what was essentially an indoctrination program but did not have sufficiently skilled personnel to perform the more useful instructional services: particularly those desired by the Masai themselves. Budgetary provisions were relatively meager, and accounting procedures and salary scales poorly organized. The neglect, or failure to vigorously attack and intelligently plan the training program was a fault of other livestock programs aimed at traditional producers in other countries.

3) Side Effects. From the viewpoint of the evaluation team, an important effect of the project was certain changes in attitudes. One of these concerned

attitudes of Tanzanian government personnel toward the Masai. As we indicated in an earlier section of the paper, pastoralist peoples have been viewed with a mixture of contempt, fear, and paternalism by the elite of sedentary African tribes as well as European colonial officials--the attitudes occasionally mixed with a mystic romanticism (the latter especially characteristic for Arabs and bedouin). Tanzanian government officials are drawn from old urban commercial elites and the large agricultural tribes; these people are also selected for positions in development projects. The "regrettable paternalistic attitude" (USAID-Devres 1979A:89) shown by these people toward the Masai impeded instructional efforts and project operations in many respects.

Low salaries paid Tanzanian employees also led to a number of abuses of which the Masai were the victims. Veterinary animal drugs were apparently frequently sold at prices higher than the official project amount, or the price as set by the district government Livestock Office. Tanzanian personnel were also given inferior ranking and paid lower salaries than the expatriate technicians under project contracts. Per diem allowances paid government personnel terminated in the early 1970s, reducing field work and contacts with the Masai. These factors of morale may have accentuated paternalistic or hostile attitudes toward the Masai.

Masai attitudes related to government support of technical services have been mentioned previously. The team returns to this theme at several points, noting that once the government subsidizes such services, the Masai attitude was characterized as, ". . . they have done this much, let them finish it" (USAID-Devres 1979A:90).

Other developments mostly detrimental to the project were as follows:

Tanzanian technicians in U.S. training programs often left the project after return--in 1979, seven out of twenty.

Tanzanian regulations preventing rangeland burning were considered by the team to have mitigated against range improvement, since selective or controlled burning is beneficial to pasture regeneration.

Continual shortage of consumer goods in the Masai country was considered to act as a negative factor in incentive to sell cattle.

No role for women was envisaged by the project from the beginning. The team considered this to have mitigated against improvements in calf mortality and weaning, since Masai women are mainly responsible for raising calves.

A favorable side effect of the project was the two bull breeding ranches started by the project, which stimulated the development of similar institutions in several districts south of the Masai country. On the other hand, in 1976, the World Bank, the chief patron of the bull ranches, withdrew funding, requiring the two district development authorities to maintain the ranches with their own funds. These were inadequate, and the ranch facilities were rapidly deteriorating in 1979.

Wildlife conservation measures taken by the government during the project had some undesirable effects. This was due mainly to allowing wildebeests and

other ruminants to graze in Masai rangelands, due to pasture problems in the game parks. Since these animals carry diseases which affect cattle, Masai herders were forced to abandon 11 separate grazing districts.

This list could be extended; the items selected above are important and also representative of the kind of difficulties which affect ambitious projects in African countries. The issue again arises: the difficulties and "failures" are inevitable given the large scope of the programs, and expectations based on Western performance standards are difficult to achieve in developing countries with evolving governmental structures and untrained personnel.

An example: the assessment of accomplishments in range management improvements includes the following: grazing plans were developed for a few villages in each of the Masai administrative districts, nine of which were in full operation; and five out of the planned eight Tanzanians selected for range management technical training were actually trained and were working on the project. These represent substantial accomplishments given the primitive state of the art before the project. The Devres team, however, faults the project for not accomplishing more; in particular, the fact that "No significant change was effected in basic Masai attitudes" toward the key fields of range management--except, of course, in the village plans previously mentioned. The report then (appropriately) concludes "that 10 years is a short time in which to expect large changes in traditional range use patterns" (USAID-Devres 1979A:41).

More generally, such changes cannot be expected to occur independently of the other key components of Masai livestock production. Perhaps the fundamental problem of development projects like this is the separate targeting of specific components, with little coherent synthesis. Such synthesis must be made eventually in training and educational programs, and as previously noted, the training school was underfunded and poorly managed. The same fault has been observed in the other country development programs.

A final issue: the question of funding. Judith Tendler (1975, Ch. 5) has observed that development projects are frequently both over- and under-funded: overfunded in the sense that large amounts of money are appropriated, but often spent in an unplanned or wasteful manner--including the need to dispose of the funds in the limited period of the project in order to permit re-funding in later appropriations. The projects are frequently underfunded in the sense that insufficient funds are allocated to key components of the project. The Devres team cited inadequate funding for transportation, repairs to equipment, operating costs, and supplies of all kinds (USAID-Devres 1979A:27). They might have added funding for the Training Center, which was inadequate for the purposes, and the Bull Breeding Ranches. Other areas of insufficient financial support included maintenance of the dips and veterinarian stations, salary support for government personnel, water sources, and so on. Many of these failures were due to inadequate budget control, or by permitting the administrative districts to plan expenditures without suitable consultation with project supervisors.

We reserve discussion of the villagization and ranch institutions associated with the project a later section, where we shall consider them in conjunction with similar problems in other countries, particularly Kenya.

IX. ETHIOPIA: THE SECOND LIVESTOCK DEVELOPMENT PROJECT

The Ethiopian project considered here is similar to those reviewed for Somalia in the sense that the effort was concentrated on the construction or elaboration of a parastatal organization, the Ethiopian Livestock and Meat Board (LMB). This project became known as the Second Livestock Development Project, since the first, funded in 1971, concerned the dairy industry. In all, in the early 1970s, the World Bank group extended six agricultural development credits to Ethiopia (the present project was the sixth). Our information is derived from a bank appraisal paper, IBRD-IDA 1972. We were not furnished any evaluation reports on this project, so our analysis is based entirely on this single appraisal or project paper.

The livestock situation in Ethiopia closely resembles that described for Somalia. About 10 percent of the total agricultural area in Ethiopia is in crop, with the remainder consisting of grazing lands (28 percent); brush and scrub (25 percent); woodland (3 percent); and land not suitable for either crop or livestock production (34 percent). More than half of the cultivated area is farmed by tenants, with what are considered by most specialists as unsatisfactory arrangements with landlords (no security of tenure; no compensation for improvements; high rents). Government-owned land is estimated to cover about 40 percent of Ethiopian territory, and at least three-fourths of this land is occupied by pastoralists, probably mostly transhumant, with semi-permanent village settlements.

IBRD-IDA 1972 is one of the few project appraisals considered in this paper which pays special attention to land tenure (p. 3). The Ethiopian tenure situation is considered to be of "exceptionally wide variety" as a result of a complex history. The appraisal paper groups the many types into four main classes: (1) communal tenure, mainly in the north of the country, and including both pastoralists and tribal and village farming groups and communities; (2) leasehold tenure, with individuals, the government, and the church holding the rights--this is the basis of tenant farming, and includes a complex system of sub-leases for both crops and grazing; (3) individual owner-occupancy--the least-common system for the country as a whole; and (4) traditional rights to use government land, which includes nearly all of the pastoralists.

The land tenure situation in Ethiopia is considered by the appraisal paper writers to be the root cause of the inadequate development of livestock and crop production. The sheer complexity of the system makes it impossible to effect large-scale reforms, and development projects have difficulty operating since much land is in the hands of absentee owners who have little incentive to improve production facilities, or to encourage tenants to do so. Government land, occupied by pastoralists, is overstocked, overgrazed, and poorly

managed. No effective control over communally used government range is visible --chiefs, village heads, and grazing groups have no clear authority or incentive to manage pasture. This contrasts with at least part of Somalia, where cooperative grazing groups of several types have emerged, permitting some control over range and water resources.

The cattle situation is as follows: a total of 26 million animals were enumerated in the early 1970s. Of these, 6 million were work oxen. About 40 percent of all cattle are found on the government rangelands, and are controlled by pastoralists. The age and sex breakdown provides a familiar picture: from 27 percent to 35 percent are breeding cows; about 67 percent of the calves survived one year, and 60 percent two years. Thus, with a calving interval of about 18 months, the number living to two years was about 40 per 100 cows. These figures are all in the low range for cattle in eastern Africa, but the general pattern is similar to the pastoralist production system everywhere. Since about 56 percent of the land area of Ethiopia is suitable only for livestock production, the Bank considered that the existing cattle population did not provide a large enough share of the national agricultural income. This, too, resembles the situation in other countries, and constitutes the main objective of African livestock development projects. The World Bank responded to this challenge by encouraging organizational facilities for handling and marketing animals.

In the period represented by the paper, herd sizes varied, but tended to be small. Few farmers owned more than 20 animals; 5 to 10 was average. About 80 percent of all farmers had enough cattle to furnish milk for home consumption and traction power for tillage. Even the pastoralist herds were small compared to those of northern Kenya: 20 animals was maximum. Primitive methods of fodder storage helped account for small herd sizes; droughts are frequent; and the density of the human population is such as to hamper the techniques of exchange and movement used elsewhere in eastern Africa to mitigate the effects of dry spells. Livestock diseases are common, and appear to be less well controlled than in Kenya and Tanzania.

Ethiopian rangelands also support some 24 to 27 million sheep and goats, used for domestic consumption, and marketed wool.

Marketing of both cattle and sheep was conducted in small local daily markets. Prices were not competitive since the small number of buyers can easily control them. The country had almost no improved stockroutes, holding areas, or disease control stations. Weight losses on the long rough trails were around 20 percent in the early 1970s. Few trucks were used to transport animals. Hides and skins are an important Ethiopian product, but their low quality did not induce significant competition; indeed, half of the hides produced were never marketed, but passed into domestic consumption through small private trading. One of the objectives of the Second Project was to improve hide quality and establish an export trade.

From the Bank's perspective, perhaps the most significant inadequacy in the livestock sector was the "dearth of Government services" (IBRD-IDA 1972:5). Veterinarian services were considered to be "seriously understaffed." Production services were underbudgeted and had few field personnel. No livestock extension service existed in Ethiopia in the early 1970s. No ranching tradition or expertise existed in the country, and agricultural credit facilities

had no experience with loans for livestock or ranch development. In 1964, the government created a parastatal body, the LMB, which had broad powers to encourage production, marketing, build stockroutes and water points, develop veterinary services, and promote foreign trade in animal products. The LMB also had the power to assess various fees for export products, including dairy products, in order to accumulate funds for construction of production and market facilities. Agricultural credit in the early 1970s was managed by another government organization, the Agricultural and Industrial Development Bank (AIDB). The appraisal paper commends the AIDB for operating in "a businesslike manner," with "fairly conservative" procedures, in order to avoid bankruptcy, which afflicted several of its predecessors.

The Second Livestock Project was designed to accomplish the following (IBRD-IDA 1972:8):

"(a) 48 primary and six terminal markets;

(b) about 2,500 km of stockroutes;

(c) five cattle trucks, operated by LMB, to move cattle from the end of the stockroutes to consumer centers;

(d) 159 slaughter facilities with associated hide sheds;

(e) technical assistance, including the cost of a ranching specialist; and

(f) funds for the preparation of future livestock projects."

The Project also proposed that five fattening ranches, and purchase of additional cattle trucks by private individuals, should be financed by AIDB with its own funds or with funds provided by the World Bank in a loan to AIDB.

LMB was made the operating agency for the entire Project, although as is usual for Bank projects, it was not responsible for the preparation of project design, which was assigned to the government.

The total cost of the Project was estimated at US$6.43 million, of which US$2.22 million (35 percent) represented foreign exchange requirements. In addition, on-ranch investments and private cattle trucks would cost another US$0.54 million and US$0.16 million, respectively, these funds presumably coming from AIDB. The usual Bank financial arrangements prevailed, with the IDA credit extended to LMB for a term of 20 years at 3/4 of 1 percent for the first five years, and 8 percent thereafter. The government would supply its share of the funding to LMB on the same terms. In all, the government would supply US$1.50 million, with IDA supplying US$4.50 million.

An analysis of the main items in the budget shows that markets and stockroutes would absorb 32 percent, or US$2.03 million; slaughter facilities, 15 percent; vehicles, 9 percent; training fees, 1 percent; technical assistance, 19 percent (US$1.1 million); "contingencies," 11 percent.

The length of the Project was set at four years, and disbursements would be spaced over this period.

LMB would need to be reorganized in large part in order to undertake the Project. Pages 15-19 are concerned with the details of new staffing and departments; Appendix 3-1 (5 pages) gives the text of a government order specifying the new duties, responsibilities, and functions of LMB.

Since we lack documents describing the outcome of the Project, we shall confine the critique to some fairly obvious remarks predicated by results of similar organizationally oriented projects for other countries, and reviewed elsewhere in the present paper.

The objectives of the Project were broad and ambitious; the LMB was assigned many duties in connection with livestock development, some of which overlapped with another Ethiopian Government agency, the Animal Resources and Livestock Development Agency, not mentioned in this appraisal paper, but known to the writer. Like the ARLDA, the LMB was expected to "assist veterinarian services," to construct markets, pens, stock watering facilities, assess fees and the like. It would be of interest to learn whether these duplicated activities created difficulties later in the Project history.

The magnitude of the tasks to be performed stand in contrast to the primitive state of the livestock production system in Ethiopia. The Bank philosophy holds that by providing basic inputs, the entrepreneurial producers will respond favorably, making use of them to enlarge or increase production. However, as indicated in the project paper, the constraints on livestock production stem from elements of socioeconomic structure: the land tenure situation; communal grazing combined with lack of group responsibility for rangelands; insufficient scale and general poverty of farmer producers; and other matters. In other countries, provision of costly infrastructure did not compensate for these more basic constraints.

As is also the case in projects in other countries, most of the funds were devoted to construction and technical assistance, with only a small fraction to be used for training. It would seem that funds might be better spent by training both farmers, pastoralists, and the various middle-rank agents of the system in the requirements of a new commercial, high-output livestock industry, and then supplying them with credit in later years which they could use to establish their production base in accordance with these standards and objectives. However, even this approach contains difficulties considering the socioeconomic constraints in the agricultural society of Ethiopia.

In any case, the bulk of the appraisal paper consists of detailed analyses of marketing, slaughtering, preparation of hides, meat processing, and the management routines of the LMB--all in the face of what is a traditional, highly localized livestock and animal production system. The paper even lacks an estimate of the relative numbers of animals used for domestic as compared to commercial sales; i.e., there is no offtake estimate. In this sense, the project represents one of the earlier and more inadequate eastern Africa livestock project plans; the later ones contained greater sophistication on these points, although their design did not depart significantly from that reviewed here.

X. GROUP RANCHES IN EAST AFRICA

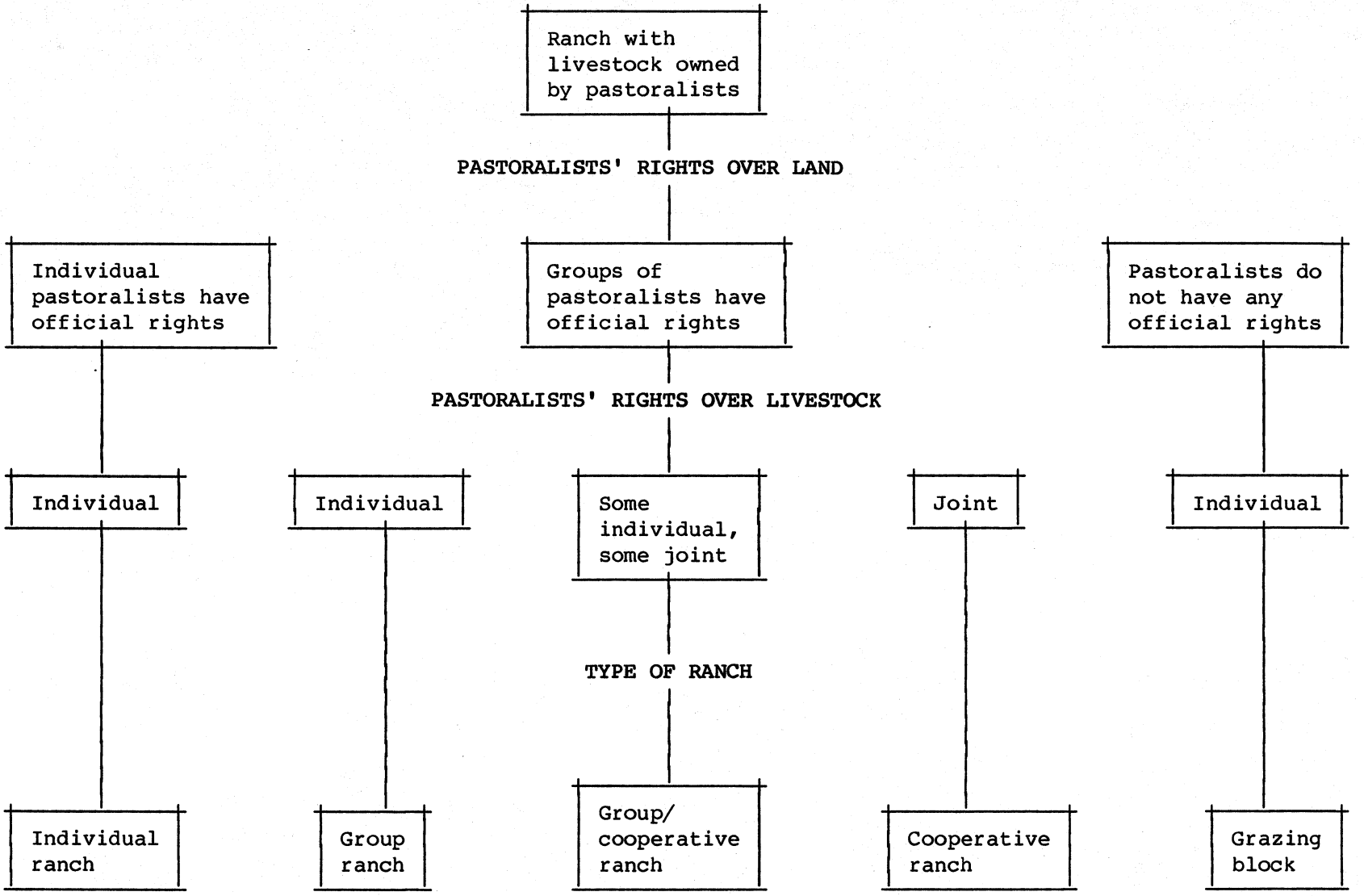
A. Concepts; Definitions; Rights of Tenure

The instrumentality receiving the greatest attention in African migratory pastoralist development and change is generally called the "group ranch." The convergence of a number of related tenure institutions toward this institutional concept is a product of the past decade of development work and the exchange of ideas among development specialists in various countries and agencies. In actuality, group ranches are varied in structure, and the variations reflect different national priorities, and different capacities to handle the problems of grazing, stocking, and marketing of animals. The relationship of institutions of land tenure and use to indigenous patterns of property ownership, grazing, and animal management constitutes another set of variables which make generalizations about the relative effectiveness of different types of group ranches difficult and hazardous. If the experiences of the past decades with these instrumentalities provide any general conclusion, it is simply that group ranches must be adjusted to--evolve within--the distinctive social, economic, and resource conditions prevailing in particular districts, regions, and pastoralist groups. The only across-the-board conclusion one might reach is that restricting grazing opportunities for pastoralists without substantially modifying the communal tenure-household/individual herd ownership system leads to serious abuse of resources, and in addition, seriously reduces the capacity of the herders to cope with recurrent drought.

The best, but all-too-brief general description of group ranches in Africa is a paper by Clare Oxby (Oxby 1982). She defines the group ranch as "a demarcated area of rangeland to which a group of pastoralists, who graze their individually owned herds on it, have official land rights" (Oxby 1982:2). However, nowhere in Africa are the group ranches--quite large--100,000 acres or more--fenced, like even the largest ranches in North America. Fencing is very expensive; no country has been able to afford such operations on the scale required, and no development project has attempted to fund them. The lack of fencing means that the boundaries, while often surveyed, and marked with posts, are permeable to pastoralists who seek pasturage outside the ranch, and to pastoralists on the outside, to enter and use the ranch acreage for grazing. This lack of fencing is a major material factor which has accentuated many of the difficulties in enforcing sole use of the ranch territory by the designated "owners." That is, while the group ranch proprietors may understand and appreciate the assignment of land title to them, they distinguish between landownership on the one hand, and grazing needs and rights on the other. No African country has seriously resorted to armed force to compel pastoralists to stay within their ranch boundaries, or to keep other pastoralists out--especially in periods of drought, which compel more flexible and expansive grazing movements. We are not implying that the problems of group ranches can be solved by fencing them; only that the lack of fencing aggravates the difficulties deriving from the distinctive production system of migratory pastoralism.

FIGURE 4

Forms of Ranching Establishments with Livestock Owned by Pastoralists



SOURCE: Clare Oxby, "Group Ranches in Africa," ODI Review 2 (1981), p. 46.

The term "ranch" as applied to the African situation connotes a somewhat larger class of phenomena than "group ranch," as can be seen from the accompanying Fig. 4, reproduced from Oxby's paper (1982:3). There are: "individual ranches," where pastoralists have been assigned tenure rights on the basis of individual or household herding units; "cooperative ranches" where the livestock are owned jointly by the herding or household units; combinations of the two; and "grazing blocks," in which the pastoralists do not have permanent or legal tenure rights--they are simply assigned a given territory to use for grazing by the government. The group ranch, then, consists of a tract of land collectively managed by herders who own their livestock individually or as household units. Of the several types, the group ranch is the most common, and on the whole, has had the most staying power.

Kenya is the country with the longest experience with group ranches, and also with the largest variety of types. Thus, the first modern group ranches anywhere in Africa were established in the late 1960s and early 1970s in the Kajiado district of southern Kenya Masailand. However, these were planned partly on the model of demarcated tenured grazing territories established by the British colonial government in the 1930s, in more northerly Samburu districts--schemes which the Samburu resisted and finally voted out of existence in the drought of the early 1960s. The concept did not die, and formed the basis of all subsequent experiments. However, there was an interlude of individual ranches. After independence, the Kenya government believed that the key to the incorporation of the Masai, Samburu, and other pastoralists into the new nation and its economy would be the assignment of land titles to individual herd-owning households, on the familiar Western capitalist assumption that ownership of land is the key to successful market entrepreneurship. The individual ranches were failures, since in the Masai districts in which they were established, the best tracts went to the few entrepreneurially inclined Masai, who promptly tried to exclude their poor neighbors and relatives. Hence the idea of the group ranch, based on the earlier British experiments, was originally conceived as a way of guaranteeing the rights of a majority of pastoralists in a given territory to use pasture. The group ranch in Kenya, therefore, was founded in part as an attempt to introduce equity, or to compromise with private entrepreneurship by introducing an element of collective responsibility over basic resources.

The crucial element in all types of ranches--and group ranches--is the type of land title assigned to the pastoralists, and the methods by which this title can be acquired. This is where differences between group ranches in various countries become apparent. In Kenya, the steps are as follows: (1) The idea of a group ranch assignment may originate in a government bureau, or to an increasing extent, in a group of pastoralist herders who apply to the government for assistance. As we shall see, this assistance takes two major forms: first, arrangements to transfer land titles of grazing land, usually in government ownership, to the pastoralists; second, to acquire a loan from the government, via its Livestock Development Program, funded mainly by international development agencies. (2) After the decision has been made to establish a group ranch, the land selected has to pass through an adjudication process, which is simply a procedure to determine who might have the right or need to use the land. Customary tribal grazing rights; residual private rights dating from the colonial era; and government titles dating from various periods all

have to be researched. (3) If the land titles can be cleared, then a Government Registrar assigns a title to the group of pastoralists who have been selected. That is, the title clearance procedure involves a determination as to which herding households are most eligible for the ranch assignment--usually people who have used the land consistently over a long time, and have customary rights to use it on a priority basis. (4) Next, the ranch is officially incorporated as a business enterprise which entitles it under Kenya law to engage in financial transactions (e.g., receive loans), and to be treated as a legal entity (to sue and be sued, etc.). The act of incorporation requires the ranch to create an Assembly of Members which must meet at regular intervals; and a smaller group of Assembly members to act as trustees ("Group Representatives"--the term deriving from the key piece of legislation, the "Group Representatives Act," which legalized the group ranch institution and established a collective ownership and management principle for land). A third body consists of the Ranch Committee which plans the development and management procedures. When all these bodies are formed, the ranch is declared in existence and it becomes eligible for loans from the fund established by the World Bank, via the Kenya Livestock Development Project (a continuing program, described previously).

Procedures for establishing group ranches differ in various countries, but the Kenya system may be taken as a fair sample. In all cases, land titles must be established or cleared, and the putative "ranch" must be manifested by a social organization of some kind. That is, the ranch is not simply the activities of the herders; they must become "members" of or participants in a body recognized by the central government, and which now has the rights and responsibilities granted to such legally recognized bodies in a nation-state. This is, of course, a big step for pastoralists to take, if they have been clinging to an autonomous tribal or local existence, ignoring their incorporation in a new national social system. The cultural and political implications of this institutionalization process are not always appreciated by the government officials, nor by the herders themselves.

A classification of tenure rights held by group ranch members in various African countries is as follows: (1) what is called the "Kenya" system, in which land rights are granted to a group of herders who have been shown to have customary rights over the range or pastureland in question; (2) the "Botswana" system, in which long-term leases on designated grazing lands are assigned to selected herders; and (3) the "Ruwanda" system in which the government gives short-term grazing licenses to a number of individual and household herders to use the same tract of grazing land--the patterns of actual usage to be worked out by the herders themselves, but with numerous restrictions.

The implications of these differences in tenure arrangements may be described:

In the "Kenya" system (also tried, with some modifications, in Tanzania), as previously noted, the crucial element is the assignment of freehold title to a corporate group--a group becomes the owner of the land in perpetuity, and the legal rights are inheritable. The organization can terminate only if the Group Representatives vote to do so, in which case the land title reverts to

government. The relation of this de facto group to traditional social organization is a complex question (see Galaty 1980).

In Botswana (also Upper Volta) the instrument of transfer is a common law lease. This lease can be transferred to an Agricultural Management Association consisting of one or more household heads. The aim here is not, as in Kenya, to establish a permanent collective management-ownership body, but simply a group of producers who declare their intention of exploiting the land. Actual ownership of the land is retained by a quasi-government body, the Tribal Land Board, which receives rentals from the land, paid by the producer association. Leases are for 50 or more years, at the discretion of the board, and can be renewed. Rights are inheritable during the tenure of the lease. The key legislation is the Agricultural Management Associations Act, which is mainly concerned with establishing the machinery for transferring benefits to the producers in the form of inputs, resource development schemes, assistance on new production regimes like forestry, and so on.

In the "Ruwanda" system (also used in Senegal) the basic instrument of tenure is a land contract, written between the regional administrative head of the government, and the individual pastoralists. The contract contains restrictions on grazing practices and on the transferability of the contract. It also requires the contractee to observe a number of management practices like stock dipping and adherence to stocking quotas. Contracts can be cancelled by the government if these practices are not followed.

In very general terms, it is possible to say that the Kenya system was devised primarily with the interests of the pastoralists in mind: their needs for grazing land and production facilities. The Ruwanda system was designed with much more concern for control by government of range and stock production. The Botswana system falls somewhere in between: the pastoralists are expected to benefit from land leases, but ultimate ownership and control is vested in the government, which can exert pressure on leaseholders. Oxby's survey of these schemes (1982:8) concludes that "The initial objective of encouraging the pastoralists' responsibility for the land they use, in the hope they will exploit it in an ecologically viable way, is therefore more likely to occur under the Kenyan arrangements than under the Rwandan and Botswanan arrangements, where the pastoralists, as tenants, have only limited responsibility for the land." This is a logical presumption, but it is based on the significance of a single factor: landownership. The ecological viability of range use by pastoralists depends on a great many factors in the social and management sphere, and not only the tenure factor. As noted previously, pastoralists in Kenya and Tanzania have tended to consider landownership as a good, but do not necessarily relate it to methods of grazing or stock management.

However, as Oxby also notes, lease and contract methods of assignment may be viewed by pastoralists as a way of diminishing, not granting rights to land that had been used previously under customary-communal rules. Moreover, in two of the systems, termination of the instruments can be done by government without consent of the users. Even the Kenya system contains constraints: accepting a group ranch means that pastoralists are supposed to terminate their grazing on lands outside of the ranch. The most frequently cited "problem" or "failure" of the group ranch system in Kenya and elsewhere has been the

tendency for pastoralists to move outside of the ranch boundaries when their grazing requires it.

These failures--which we shall discuss later--should be viewed in relationship to the time dimension and to the complexity of the pastoralist system of production. The group ranch tenure experiment is recent; the schemes formulated in most cases by ministry experts and foreign technical people; and its objectives characterized by desires on the part of government to gain economic and political control over migratory pastoralists. The welfare of the pastoralists has not been a consistent or dominant theme even in the Kenya experiments. As time passes, the group ranch "solution" to the pastoralist development program can be expected to evolve into a variety of schemes adapted to particular conditions. As pastoralists gradually come to play a definite role in the national economy, their ability to influence the nature of their tenure position will also improve. Consequently the group ranch schemes can be expected to change and evolve. The experiences summarized in the sections to follow should be considered as the symptoms of immaturity and the basis for subsequent improvements.

B. Project Planning and Design

International development agencies were asked to fund group ranch-related projects beginning in the mid-1960s, and the first projects were established in Kenya. In most countries the group ranch component was included in larger programs, and not as separately funded ventures. In Kenya, the World Bank and USAID (with participation by CIDA and other national agencies) projects were all part of the overall Kenya Livestock Development program (at time of writing, or near the end of its Phase II). Since expenditures related to group ranches were combined with many other items, it is often difficult, as we have seen earlier, to determine from the various project papers just what benefits were received by the group ranches. Expected offtake percentage, for example, may be a figure based on or applied to several types of livestock producers--peasant farmers, pastoralists, commercial ranches, and so on. Funds for loans to pastoralists may be lumped into a general loan appropriation designed to fund all livestock producers and not just the group ranches. But some specific items--e.g., water borehole work--may be designated as pertaining to the group ranches, or to "Masai herders" or similar labels which connote group ranches. (See the preceding analyses of East African development projects.)

Since, as noted, details of the project design and funding are provided in attached materials, we shall concentrate here on more general aspects of development planning and concepts. A number of documents assist this effort. An interesting early one is an unpublished paper by Olean Hess (Hess 1976), prepared for the USAID Mission at Accra, Ghana, but based on observations of the Tanzanian Masai group or villagization ranches, then receiving some funding from USAID and World Bank support for the Tanzanian Livestock Development program. Accounts of the Kenya Masai ranches are available in the papers of John Galaty, in particular his "Maasai Group Ranch" (1980); and there are various papers published by Kenyan government offices and research institutions. USAID mission files contain numerous unpublished surveys and observational accounts. There is no dearth of materials, but there is no single comprehensive synthesis

of the history and operations of the group ranches, and perhaps it is too early in their history to produce one.

Two issues are of concern here: one is the sociopolitical genesis of the group ranch idea in Africa--East Africa and the Masai; the other is the conception of the group ranch and its needs and development as expressed in project planning.

The first consideration is the political situation the Masai found themselves in after independence in 1963. Although the Masai, like pastoralists generally, were wealthy in the sense of the equity value of their grazing territories and herds, they were poor in the sense of cash derived from commercial operations. Moreover, their distinctive ethnic culture, abetted by the British policy of permitting them to remain as autonomous as possible, prevented them from taking part in the political decisions attending the granting of independence and the formation of a new national state. This state was dominated by Kikuyu, the powerful agricultural tribe that accepted British rule and education--in preparation for eventual freedom. The Masai were aware that Kenyan independence meant the beginning of the end of tribal autonomy and relatively free pursuit of migratory herding. These feelings of vulnerability centered principally on issues of land tenure. The Masai were aware of the equation of pasturage with land--territory--in the minds of the Kenyan government, as based on European--British--institutions. These fears were rapidly documented as agricultural settlers and commercial and government grain farms began appropriating large sections of the better rangelands. Other sources of anxiety have been mentioned: e.g., the early experiments with individual ranching and the disadvantages thereto for poorer herding households. These growing feelings of political vulnerability generated an awareness among Masai leaders that changes were in order. The people were therefore prepared for schemes which might guarantee some kind of political stake in land tenure.

Government actions with respect to the pastoralist problem in Kenya were, on the whole, prompt and generally serious. Protection of Masai and other pastoralist grazing lands was seen as a necessity, and legislation was passed enabling the government to conduct land adjudication procedures; this was followed by the report by J. Lawrence in 1966 which sketched out the basic concept of the group ranch (Lawrence 1966). Masai supported these proposals and planning for group ranches began in various parts of Kenya Masailand, the first eventual formal assignment of title occurring in the Kajiado district in 1975, to a particular ranch, although ranches in early phases of existence extend back into the mid-1960s. Masai approval was predicated not only on the land tenure issue, but also on the fact that acceptance of a group ranch entitled them to receive benefits they had always sought: animal health measures, breeding stock, and extension services. The point of all this is that the Masai were not unalterably opposed to the group ranch concept in the 1960s and 1970s because their political situation had evolved to the point where they were prepared to accept any reasonable guarantee of economic continuity. If the system would impose difficulties in stocking and grazing, these were problems that could be met in the future.

From the point of view of the government, it was hoped that the group ranch would solve the problem of Masai economic support, but this general

objective was probably secondary to two specific issues: the need to reduce and control the number of cattle on the range, and the amount of territory the Masai considered open range. The philosophy of the ranch concept, as already implied, was that by having title to a particular tract of land, the pastoralists would automatically reduce their herd size and cease to wander at will across communal lands. That is, the idea was to abolish the idea of wide-ranging communal grazing by substituting titled landholdings. Similar concepts have been at work in all the other countries in which some form of group ranch has appeared.

Olean Hess' paper provides a sample of the rhetoric which characterized development project planning during the late 1960s and early 1970s. The following quotation (Hess 1976:11-12) documents the primary objectives of the first Masai Ranching Associations in Tanzania:

> 2.1 Objectives for Ranching Associations
>
> The major objective for the eight Ranching Associations initially selected to be fully activated is an annual average market offtake of 12 percent or more. In order to achieve this objective, the following targets have been established:
>
> a) Average live weight of steers slaughtered should increase from 550 to 650 pounds.
>
> b) Average age when steers reach market weight for slaughter should be reduced from six to four years.
>
> c) Average age when females have their first calf should be reduced from five to four years.
>
> d) Calf drop by females should increase from 50 to 80 percent per annum.
>
> e) Calf mortality should be reduced from 35 to 20 percent.
>
> f) Overall annual calving rate should increase from 35 to 50 percent with a comparable weaning rate.
>
> These goals may not appear very ambitious compared to levels in livestock production enterprises in developed nations. However, achieving them in a ten year period, given the initial conditions and constraints, will result in a vast improvement, and should move the program along to a point where it will continue to grow and develop on its own initiative.

Although Hess may be correct in noting that the objectives were modest as compared with "livestock enterprises in developed nations," the goals are extraordinarily ambitious viewed against contemporary knowledge of Masai pastoralism and its distinctive management style. Hess did observe that in order to fulfil such objectives "a host of supporting activities" would need to be mounted, and other passages in his paper testify to a general comprehension of the difficulties in converting a part-subsistence migratory livestock regime to a sedentary-intensive commercial one. But the views are not consistent. For example, on pp. 13-14 he attributes growing difficulties with the Tanzanian Masai ranches to the social customs of these people, in particular their need

to use cattle for bride-prices, wealth symbolism, and socialization for the young warrior-herder men (murranis). While those are valid points, what Hess, and so many other specialists in the country ministries and development agencies could not appreciate in this period, was the complexity of the production system, and the way this was geared to demographic and resource factors. That is, the way the Masai conceived of what Westerners called "conservation": that God provided the grass and it was man's purpose to raise as many animals as possible on it, moving these animals around to make full use of available pasture and water in a sufficiently large territory. Territorial size was a variable, not a constant. While it might be argued that assigned ranch ten- ure could be interpreted as a limit on territorial size and therefore a limit on herd size, this point was not obvious to the Masai. In particular, the argument ignored the factor of intermittent drought, which had the effect of varying the productivity of the range; i.e., of making "territorial size" a variable in terms of productivity and not areal extent.

Whereas in the recent past the pastoralists had operated their livestock regime alone, with minimal assistance from government and extension agents, with the group ranch system the number of supporting and supervising personnel from the outside increased, and these people were employed by or were advisors to, a series of new organizations and agencies. In Tanzania, a Range Commission was established in the more arid range areas, consisting of Masai representatives, the District Commissioner, and representatives from as many as five different ministries and government agencies concerned with agriculture, range, livestock, water, and so on. The Commissions are supposed to encourage group ranch formation, supervise loans and technical assistance, and develop plans for range management and conservation programs. In one such Commission, some 10 non-Masai persons regularly participated in Commission activities along with Masai. Supplemental salaries for these people were paid out of World Bank and USAID project funds in part. Added to these people were numbers of specialists from government and technical assistance (foreign) teams who visited the ranch area at intervals in connection with various services and programs.

This Commission and its satellite technicians operated in the background of the ranch structure formed as a consequence of the legislation. Each ranch was governed by an Association, with an elected steering Committee to supervise all activities and government inputs. The Committee would outline plans, then the members would return to their districts to discuss the issues with their constituency; then another Committee meeting to hear criticisms and suggestions, and so on. This procedure created an overlay of decision-making and political interaction that in pre-ranch times did not exist. In addition to the Committee, each Association was required to choose persons to function as managers and directors of the various activities, like water maintenance, stock dipping, etc. Dues were assessed by the Association and the proceeds recorded and deposited. Government auditors supervised all accounting procedures and checked records. Some Associations have encouraged the building of schools and other social service centers, seeking government help to do so.

This thumbnail profile of the bureaucratic structure of a group ranch can be taken as representative of most group ranches and related types of restricted grazing tenure institutions in other countries. The group ranch

is not a free and independent entity, but must organize so as to provide accountability to the government and development authorities. Galaty, writing on the Kenya ranches (1980), makes the point that while these organizational structures represented something new in Masai social structure, the power and lines of authority and decision-making followed traditional social patterns of age-grading, clans, and territorial groupings. That is, the existing Masai social system tends to assume that the group ranch is another form of socio-economic activity to be controlled by the same instrumentalities that herding always possessed. To the extent this is the case, it can be expected that elements of the traditional production system and its interest in maintaining the largest number of animals will persist.

Another element of the planning and development process in Tanzania concerns the interest of the government in furthering sedentarization or "villagization" of migratory herders--an objective shared by every African country with herding populations. The Tanzanian case is an especially instructive one because of the special ideological elements; namely, the **ujamaa** concept of cooperative-collective village organization.

The original government plans for Masai areas included eventual settlement of the population in these villages with collective and cooperative institutions of social relations, production, marketing, and so on. The group ranches were seen as a first step in this direction, with the ranch headquarters becoming the village site. Every foreign livestock specialist used by Tanzania and the development agencies argued against this practice, since it was formulated for farming (cropping communities and not livestock producing--another example, in its way, of the tendency in the new countries for agricultural tribal people to do the planning for migratory pastoralists. Olean Hess observed that "The provision of requisite social services can be quite a different proposition with very limited crop production. Some food crop production can and should be practiced in the range livestock areas, but the sites for cultivation must be very carefully selected. Areas such as Masailand lend themselves to livestock production very well, but the majority of the soils cannot support sustained cultivation. . . . Settled as crop-production of large permanent ujamaa villages, they are likely to become a wasteland of weeds and eroded soil very soon" (Hess 1976:49). And by the late 1970s, many of them had done so, according to reports in the files of the Dar es Salaam USAID Mission, and evaluation studies made on USAID and World Bank projects.

Hess recommended that the villagization experiments be carried out in the form of small, scattered villages used as centers for delivery of services, schools, and retirement of the aged, and in subsequent years this policy was adopted by the Tanzanian government at least tacitly. By 1980, the Arusha area had approximately 15 such small settled loci, connected by new roads ("Drought Roads") constructed for assisting in livestock marketing. Reports on these communities in the USAID Dar es Salaam Mission files (Hatfield n.d.) leaves no doubt that the Masai have begun to utilize these settlement possibilities, but that no real villages are forming (i.e., settlements with substantial permanent population engaging in the full range of social activities, births and deaths, etc.). Hatfield's report seems to show that this degree of "villagization" in Masailand was caused less by the **ujamaa** philosophy and planning, and more

by the fact that stock dipping and other services have to be done at a given point, selected as convenient to the herding groups in that area; or in a group ranch territory. That is, the modification of **ujamaa** policy advocated by Olean and others in the early 1970s is coming to pass as a matter of evolution and not formal planning.

However, it would be necessary to study the situation in detail before one could be confident of trends. The Arusha region--the heart of Tanzanian Masailand--is the recipient of a comprehensive development plan headquartered in the town of Arusha. Tanzania has centered supervision of all development projects affecting a particular region in a central regional office. This system has concentrated and coordinated development efforts in Masailand for the past decade, and Arusha has received a considerable share.

The situation in northern Tanzania underscores a fundamental feature of the livestock development program affecting pastoralists: the concentration on animals and economic matters and relative neglect of the social infrastructure. While most project documents for all countries mention the "benefits" to the human communities, little or no investment was made in these facilities, nor was research accomplished which might have described the necessary social adaptations required for a shift to commercial production on a ranching basis. Some elements of this were of course funded through other types of projects, involving market roads, health services, and other matters, but such projects were not part of our assignment, nor does the literature read by the writer demonstrate any marked accomplishments. Most economic development projects made the assumption that once the economic and production structure was changed, the human community would follow along. This is often the case, but it requires facilitation.

C. Problems of Operation

As already noted, the history of group ranches is recent, and the sense of failure that pervades many development projects may well be the consequences of premature assessment. It is clear that group ranches are not simply instruments of production, but human organizations that must be based on existing social patterns as well as innovative forms. The group ranch can be expected to evolve, with or without development projects, for the simple reason that pastoralists are coming to see that their political survival depends on some form of tenured grazing lands.

The most commonly cited problem of ranch operation has already been mentioned in various contexts: the tendency for pastoralists to attempt to enlarge their individually or household-owned herds to take advantage of as much grazing as possible. Title or lease or license to a restricted tract has not on the whole turned pastoralists into "sedentary" intensive ranchers. In any case, no country has supplied the training and inputs necessary to transform migratory herders into irrigated forage-producing ranchers if this is what it will take to effect the full transformation. To pursue the North American analogy: group-ranch pastoralists are at the present time in a stage of development comparable to open-range ranchers in the United States and Canadian West *circa* 1870-1900. That is, they have acquired some "home" or headquarters

land; have accepted small home-ranch or hamlet settlements for conducting business, animal health management, and marketing; but continue to utilize free or unsurveyed range to the extent possible and practical. Under such conditions, pastoralists--or open-range ranchers--cannot be expected to materially reduce or limit herd size. This might be accomplished by establishing cooperatively owned and managed herds, but to do this successfully, marketing and price circumstances have to be more securely established. No African country can manage such facilities at the time of writing--their agrarian systems are simply not this comprehensive or their markets so predictable. Above all, there is lacking sufficient control and backup needed to compensate for the disbenefits introduced by recurrent drought in dryland regions supporting livestock production.

Other problems emanate from the procedure of ranch organization. One of the difficulties in discussing group ranches is to ascertain precisely how many are in operation at any one moment. The organizations called group ranches are usually in various stages of formation, management, or desuetude. Landownership and transfer is a long and complex process in all cases, and ranches can remain in a suspended state for years, caught in the midst of the process. Moses Olang, a Kenya range ecologist now working in the Ministry of Natural Resources, notes that a Kenya ranch cannot be considered to exist until it has been officially registered. This signifies that the land adjudication process has been terminated and all the land has now been titled to the ranching group. However, this can be accomplished on schedule only in cases where the land is owned by the clan; where individual households hold titles, it may take years, during which time the ranch exists in a twilight zone of legal and economic functioning (Olang 1982:2). Considering the fact that many if not a majority of group ranches are only partly constituted, it can hardly be expected that the full schedule of operations, inputs, and production can live up to the criteria and standards established.

Since a dominant objective of ranch establishment is reduction in herd size, in order to reduce grazing pressure on constricted pasturage, all forms of the ranch have grazing quotas, or a restriction on the number of animals allowed to use the range. A secondary objective of most quotas is to establish criteria for loans--when a pastoralist can prove he has reduced his stock in accordance with the set number, he may become eligible for a loan. Quotas also contain the assumption that all herders using the land in the ranch property will be equal in wealth (as defined by herd size). Aside from the difficulties in fixing and enforcing quotas due to the pastoralist conception of elastic and maximal herd size, other practices make it difficult to accept herd equality. As Olang notes, among the Masai a young man receives a cow at birth, and it is his duty as he grows up to increase the number of cattle he owns in his name--by purchase, reproduction, occasional raiding, and other methods. This dynamic process is ingrained in Masai social structure--Olang states that "we have no power to make them equal in wealth" (1982:4). To enforce quotas at any point in time would mean that some households would have to accept a reduction in wealth, while others, the poorer herders, would be allowed to increase their herd. Since the normal process of herd accumulation does discriminate among herds in terms of ability and managerial acumen, the quota system violates basic entrepreneurial incentives and values. In addition, the purchase of additional animals by small herders requires cash or property which these

people usually lack and have no means of acquiring. Consequently few group ranches have been able to enforce quotas, and this operates as a force to maintain the traditional elastic herd size and expansive grazing system. The following passage from Olang's paper (1982:4-5) illustrates the problems:

> A livestock census is carried out for the purpose of grazing quota allocation. The figures which are obtained are then converted into Animal Units [which are later used in calculating grazing quotas: JWB].
>
> Example:

Family Name	Livestock Numbers	A.U.	Grazing Quota Allocated
Family "A"	250	150	108
Family "B"	120	72	72
Family "C"	40	24	40
Family "D"	75	45	50
TOTAL	485	291	270

> Let this group ranch be for only four families, for the purpose of grazing quota allocation. And also let its maximum permissible animal units be 270. So the grazing quotas should not total more than 270. It has also been found out that a family of six will need 40 animals to provide the minimum home requirement. The allocation starts with the poorest family which is "C." This family is given a quota of 40 A.U., then family "D" is given 40 A.U. Family "B" is left at 72 while family "A"'s quota is brought down to 108. If the ranch is overstocked then this is the figure used for destocking.
>
> This calculation is done in year 1 while loan repayment starts in year 4. But in the fourth year family "A" may have 170 A.U. In this case what figure should be used for loan repayment? It must also be realized that when the loan was being apportioned to the ranchers it was 150 A.U. which was used for family 'A.' And at the moment it is that figure (150) which is used throughout the loan period, because figures are never adjusted later on.
>
> So it is just in theory that the grazing quota is used for loan repayment. It is used only in destocking.

We have noted that the establishment of the group ranch concept has required an elaborate government bureaucracy. This is deemed necessary in order to effect the changes necessary, but it is also a requirement imposed on the country governments by the terms of technical aid. Accountability for funds, and guarantees of successful outcome in order to maintain eligibility for future funding, require governmental or parastatal offices for the keeping of records, maintaining pressure on the pastoralists to conform to standards, and the delivery of the inputs which facilitate performance. Galaty (1980B) has observed that pastoralist development projects frequently contain an element of built-in failure or criticism due to this concentration on organizations and bureaus. When the objectives sought in the project are not met

adequately, the pastoralists are blamed for not responding appropriately. That is, the presumed beneficiaries of planned change are made responsible for the failure, not the organizations created to engineer the change.

Some details: Land adjudication in Kenya is done by a government department with two sections: one that conducts the land survey; the other, the office that discusses the proposed ranch boundaries with the herds who have been using the tract, and determining who is most eligible for membership. This has proved to be a time-consuming procedure, sometimes taking years before the necessary surveys and decisions have been made, and the precise land area selected. Each ranch, once its adjudication procedure is complete, then falls under the jurisdiction of a Group Representatives Officer, whose duty it is to see that all members live up to the requirements, and to advise the members on patterns of conformity. The problem is that there are too many group ranches for the available staff to service. A single officer may have 10 or 15 ranches to oversee, and since the budgets are limited, he may have difficulty obtaining sufficient gasoline to make enough visits. During the rainy season, roads are often impassable. Lacking close contact with the supervisory personnel, group ranch members tend to go their own way.

Water development has been an especially difficult problem--not only with group ranches, but with all pastoralist development schemes in the dryer countries (Sudan has had considerable trouble, since water development is in the hands of a parastatal company which sets domestic human water supply priorities above those of wells and boreholes).

Such priorities are not idiosyncratic or completely reflective of domestic political pressures: foreign aid representatives in the 1970s pressed water development agencies in the country governments to reorient their expenditures toward villagers and other domestic users, in line with the change in development policy involving favoring "basic needs" and poor people. Bureaucracy is another problem in water development. A plan for a borehole, requested by the agricultural ministries, must pass through many levels of officeholders before it can be acted upon, and equipment for the wells once dug may take as long or longer. Two years is considered about average for Kenya group ranches.

Installing and servicing facilities for group ranches is usually a low policy priority in most countries--despite the need to make their dryland regions more productive, and their populations more self-supporting. But pastoralists, usually a national minority, and difficult to incorporate in national social and economic plans and activities, are persistently downgraded as a priority population. They lack political power; their performance record in the livestock development projects has been disappointing to all concerned; and despite the general awareness that the nature of the projects is a major factor in their failure, the limited returns, and resultant indebtedness, has not inclined governments to move vigorously. Even the welfare argument is difficult to apply: pastoralists evade simple classification as members of the "rural poor," because their economic position is difficult to classify with the criteria used for farmers and villagers.

The very transitional or ambiguous nature of so many group ranches makes it difficult to apply the rules established in the various schemes. Loans and

other services advanced to the ranches that require repayment or delivery of stock to marketing facilities are seldom enforced, since the ranch owners are usually not in full compliance with the ranching scheme and regime. In Kenya, failure to repay loans to the government is supposed to be followed by a government foreclosure and sale of the ranchland, but this has never happened despite many cases of default. Pastoralists do possess one weapon: they have a reputation for taking matters in their own hands if they feel they have been exploited or their rights violated. African governments are extremely nervous about unruly rural populations; they are not likely to move against pastoralists if the group concerned has a reputation for forceful action.

With some exceptions, notably Botswana, where members of pastoralist tribes have played important roles as government officials and planners, pastoralists have not been consulted freely in the planning of group ranches. This is undergoing change, as pastoralists take increasingly important public roles in their own defense, but the difficulties remain. Again, one can find a transitional situation: language difficulties, hostility and passivity of pastoralists when confronted by government, and unwillingness to openly subscribe to measures requiring modification of traditional livestock regimes, have made it difficult for government planners to obtain cooperation from pastoralists. Still, the curtailment of free grazing movements becomes an imperative when alternative uses for the better rangelands arise, so the ranch schemes are legislated and put into effect. There is no doubt that many of the defects are the result of failure to consult the "target population," but there seems to be little alternative. But as noted, this is changing as pastoralists come to accept the necessity for change.

The need for intensified extension services to assist pastoralists in managing group ranches is acknowledged by everyone concerned, but provision of such services on a regular basis has proved difficult and expensive. Since ranches are in a transitional status, with many or all of their members moving regularly, at great distances from transportation or settlement points, or beyond the boundaries of the ranch, extension agents have found it difficult to reach them. Again, one finds a financial priority issue: extension work with pastoralists in many regions is at least twice as costly as with settled farmers, due to the need for adequate vehicles, much gasoline, the long distances, and salaries paid in relation to results obtained. In Kenya houses were constructed for Range Assistants near key boreholes, but since the group ranchers were at some distance from the wells during much of the year, and since the Assistants lacked adequate transportation, most officers moved back into towns where their families could find better services and facilities (Olang 1982:10).

D. Some Concluding Observations

This paper takes the position that a major key to change and development in pastoralist livestock production is to be found in the institutions of land tenure. The group ranch is the most obvious example of the use of land tenure to effect changes in economic activity and habits of settlement, and in a sense, it is the inevitable or ultimate form that pastoralist transformation must take in most countries and regions. However, this is not equivalent to arguing that all group ranches are desirable or well planned.

In the first place, the group ranch system appears most suitable for the better range areas, where restricted grazing and better watering is obtainable, and consequently improved possibilities for intensified production. However, since these areas are precisely those where alternative uses for the land are also in view, the group ranch is automatically in a situation of resource competition with farming, agribusiness, game parks, and tourism. The relatively low priority status of many pastoralist populations means that group ranches tend to be established in compromise localities--not the best range, but, hopefully, not the worst. However, the poorer the range, the larger the ranch needs to be, and size creates financial problems of delivery of services. Large size, plus marginal grazing, also encourages pastoralists to follow traditional migratory strategies.

Secondly, while a land tenure device may lie at the base of development, it is by no means the only important factor in the success or failure of ranches. Tenure has to be inserted into existing social systems--or at least if some aspect of the social system requires change, this has to be researched carefully in order to plan the ranch accordingly. The most essential factor is of course the institutions of property ownership and transmission: when land is considered to be held by a collectivity, a group ranch tenure tract may be more easily introduced than in cases where land is a matter of fragmented household rights. Colonial tenure arrangements have persisted in many countries; the presence of these residual rights complicates the transition to a group title. Clearly no group ranch should be formed until detailed research on property rights and institutions has been conducted. Governments and development agencies have tended to view group ranches as an opportunity: give the pastoralists land and let them accept the incentive to change production. However, as we have shown, the matter is not this simple. The group ranch is both a social and an economic institution; neither side of the equation can be neglected in its planning.

While the group ranch seems the likely outcome for migratory pastoralists, it is no solution for the many African mixed farmer-herder groups, who practice both crop cultivation and transhumant or wet-dry-season pastoralism. This group, plus the migratory pastoralists in the exceedingly dry regions where farming is largely impossible, will require some form of tenure adjusted to their need for continued movement. For the mixed cases, large community pastures, like those used in parts of Western Sudan, may be the only suitable tenure arrangement. Such pastures are reserved for use in the dry season, and maintained by government, but the farmer-herders may also become members, and pay small annual fees for use and development.

For pastoralists in very dry regions, other solutions will be required. For the time being, there seems no good alternative to some form of migratory movement. Since the arid regions are also inappropriate for crop farming, there exists less competition from other types of land use. Grazing blocks, appropriately planned and administered, may be the best solution. These can be flexible, with monitored boundaries in order to keep herding groups reasonably separate, but in periods of unusual drought, or other dislocations of the normal annual grazing pattern, these boundaries could be opened and the herders permitted to move freely, or to work out their own arrangements as to sharing of range.

These various solutions to the grazing problem must be considered experimental and transitional. The final disposition of migratory and transhumant livestock economies in Africa is bound up with many social and demographic factors, as well as the changing vector of relationships of the herders to central governments and their planning processes. All of these factors are constantly changing and evolving. Pastoralists are moving into new occupations and playing new and different roles in the national and regional economies; their position in African countries is subject to constant review. The group ranch has much to recommend it, but it is not the only tenure arrangement, and its precise terms must be expected to vary by region and situation.

XI. SYNTHESIS AND RECOMMENDATIONS: THE POLITICAL ECOLOGY OF PASTORALIST DEVELOPMENT

The most fundamental deficiency, in the view of the writer, of the development programs in the 1970s affecting migratory pastoralists and their cattle was the failure to deal with the "whole system" of pastoralist existence: the social, cultural, economic, and ecological mix of adaptive strategies and objectives which make up the dynamic relationship of pastoralists to the physical environment. Since the time of European penetration, this social-ecological system has included a political factor: the intentions of governments toward rural populations, and the efforts of these governments to absorb these populations in the institutions of the nation-state. Heretofore, East African pastoralists escaped most of the incorporative aspirations of nations; they occupied lands largely unfit for crop agriculture, and the kings, emperors, chiefs, sheikhs, or early colonial overlords largely ignored them and their territories. They were considered to be part of the wild fauna; and this fauna interested the colonialists and the traditional elites mainly as a source of adventure and sport. Repressive attempts to keep pastoralists at bay were frequent: they could easily become unruly in defense of their pasturelands; and their own method of maintaining a balance between people, herds, and grass included warfare and raiding. One suspects, after perusal of the older ethnological literature, that these activities were, in fact, vital for the avoidance of Malthusian effects involving pastoral people, animals, and forage. Anthropologists who advocated a live-and-let-live policy with respect to pastoralists in Africa and the Middle East rarely coped with the issue: that maintenance of the migratory pastoralist cultural status quo might be achievable only by a complete return to a traditional existence which is impossible in the framework of the nation-state. This is the fundamental issue of the political ecology of migratory pastoralism (as it is for other agricultural adaptations which require types of resource management which must be changed since the tribe is now a cultural or demographic minority in a larger political system).

Thus, the system of migratory pastoralism in the contemporary world must undergo modification of the political and tenure transiency associated with herd and herding-group mobility. This involves a process of conflict and accommodation; of experiment and compromise; and none of these are easily achieved in the setting of the typical development project and its logical framework of purposive action, economic incentives, of inputs and outputs.

In an earlier section, we noted the existence of a number of attempts at defining the larger system of migratory pastoralism. These models aim at different targets, but they share certain elements in common. We find that these fall into the following interrelated sets:

A starting point in such models is the fact of a relatively small, dispersed population--i.e., low population density--making a living from marginal

or specialized resources with relatively small amount of output possible from large surface areas--what is called, with reference to livestock, low carrying capacity. However, the same principle operates when the human group selects to do some farming in order to supplement their subsistence or income derived from livestock. Considerable tracts of land are necessary in order to provide any desired or needed output.

The low carrying capacity, and consequent need for management of large land areas, presents special problems in light of the relatively small and dispersed population; that is, there exists a constant potential for a labor insufficiency. This shortage may not become evident until demand or need increases. Characteristically, over long periods of time, a balance is struck between the size of the human population (its labor supply) and the number of animals (and/or crops) that can be supported on given areas of land. Under undisturbed tribal situations, these balances were worked out with the help of inter-group confrontation and conflict, as well as the practice of (little-understood) means of human fertility control. Human populations remained fairly small for long periods of time. Nevertheless, this balance was repeatedly upset, even under tribal conditions, at intervals when politico-military leaders translated the normal boundary-maintaining raiding operations into adventures of conquest and expansion.

The difference between these episodes of disturbance and those attendant on European intervention concerned the political forces already alluded to: the increasing importance of centralized bureaucratic government and the extension of the power of the state into remote geographical areas in an effort to relate production to national goals, and to incorporate all population groups into the national system of political and economic institutions. This has made it increasingly difficult for pastoralist groups to resist intervention with traditional methods of withdrawal or armed resistance--although both strategies, on a greatly and progressively reduced scale, continue to be manifest. But they no longer offer a solution to the problem of involvement of the pastoralist group with the nation-state; only postponements.

The second question has to do with the cost of social services as related to the economic geography of rangelands. Known in North America as the "costs of social space" (or conversely, the "social cost of space"), it means that the more dispersed the population, the higher the monetary cost of delivering social services equal to those supplied in more densely populated, and especially nucleated centers (Anderson 1950).

An example of this principle at work is provided by the attempts to extend social services to pastoralists in various parts of Kenya, particularly the north. John Nkinyangi (1981) describes the several methods used to provide schooling for pastoralist children, most of which failed, or functioned minimally, due to the ultimate inability or unwillingness of the government to fund such expensive programs. To provide schools, houses, and facilities for resident teachers, high salaries and bonuses to induce qualified people to accept such jobs, loans to district authorities to maintain the facilities and routes of access, made education for such regions at least twice as expensive as similar services provided for towns, and even villages. Reluctance to fund well-meaning programs of this type was based not only on

sheer cost, but on the fact that so many attempts to do it were not patronized sufficiently by the target population; and this, in turn, was often caused by the fact that insufficient research on the location of such facilities was done previous to the decision to institute them. However, even adequate research may not provide a good answer since the pastoralist groups are themselves undergoing dynamic readjustments to changes in available pasturage, new market incentives, and the like, making prediction of settlement pattern difficult.

The situation is taken care of in developed countries, like the United States and Canadian West, by almost unlimited sources of funds; by a productive market economy which furnishes the capital to create "central places" where consolidated services can be located, and by good roads and the automobile (and incomes to support them), to provide citizen access. Even so, many if not most districts in the Great Plains of North America (fragmentary evidence from Soviet Central Asia suggests similar problems) receive less in the way of social benefits than their compatriots in the towns and cities. It must be expected that this will be the situation in Africa for a long time to come.

This doubles back on the need or demand factor. That is, residents of such regions of dispersed and/or low population density can declare their interest in receiving services at least in part by their willingness to share the cost--either in cash or in kind, like donated labor to construct roads and buildings. In the Masai development program reviewed in the last section, attempts were made to solicit contributions from the Masai themselves. In some districts, this willingness did materialize, but always with respect to measures designed to improve the herds of livestock rather than "improvements" in the welfare of the human population. Involuntary taxation can be instituted, but this is largely futile if the population does not enjoy an appropriate income providing disposable surpluses, or if they do not feel sufficient need for the services. The provision of services to such populations, in the last analysis, must be an evolutionary process: as other components of the system intersect so as to generate need and desire, this will be expressed as a matter of course. In broad outline, this means progressive incorporation of these people into the larger system of the nation-state and its employment markets, commercial agricultural activities, and the like. Let us hope that pastoralists will be given some choice of the means.

As we have noted in other contexts, one difficulty with the "planned change" approach, expressed in the typical development project, is its specificity: it focuses, for various good reasons and bad, on particular segments of the system. "But for the want of a nail, the shoe was lost . . . ," and so on. Accusations of ignorance and even stupidity are easy to come by in such situations, but a fuller understanding of the social processes of change may suggest that it is often simply impossible to know where to begin.

In short, we are touching here on the fundamental ambiguity of the change process in human affairs, the limits of planning, and the uncertainties characteristic of social and economic institutions in process of transition to new forms.

The third component of the pastoralist system concerns human and animal population dynamics in the context of transition. Throughout history, herding

societies have had a problem here; that is, human or animal populations can increase beyond the capacity of the specialized resources to sustain them at given levels of technology and management. In the era of state formation and economic development which began with European control, and at an accelerated rate since independence, this imbalance between population, resources, and mode of production has often become acute. The problem of "development" for pastoralists in eastern Africa has thus been dual: one facet is to increase productivity and efficiency of livestock production so as to assist in the conversion to a commercial economy and reduce the subsistence function. The second facet is to control production and output in order to redress the ecological imbalance--to reduce the numbers of animals and--though this is never stated openly--perhaps the human population as well, when it is "large" relative to resources. Currently, pastoralist populations seem to be declining, but the magnitudes are obviously relative to other things.

This dual character of the development process is the root of the trouble, the ultimate cause of the so-called "failure" of so many livestock projects in the region. Development was visualized almost exclusively in classic Western terms as a matter of increasing output at lowest possible cost; the fact that this could aggravate the Malthusian imbalance was perceived but not really faced; it was assumed that by shifting toward a commercial regime, stock numbers would automatically lower as pastoralists became aware of the financial advantages--and greater access to social services--provided by increased offtake and altered breeding and grazing practices, intensive resource development, and so on. In the transitional situation the entire region is now passing through, this assumption is valid providing that the other components of the system are brought into relationship in an orderly, or at least predictable, time frame.

Many factors fed this imbalance; we have discussed some of them in previous sections. J. Helland sums them up for the Masai:

> The large fluctuations in the animal population of Maasailand have occurred over the past few decades as the result of government interventions and the incursions of other groups. Sharp reductions in the population occurred in 1960-1962 and in 1974-1976, triggered by drought but also due to these longer-term problems [1980a:3].

He also notes that the British played an important role in contributing to the increase in herds by preventing the Masai from acquiring the superior Boran cattle breeding stock, necessitating larger herds of lower-productivity animals; in turn conditioning the Masai to desire larger herds as insurance against drought or other problems; and so on. Drought was the significant force leading to herd reductions: in the Kajiado district of Kenya, the heart of Kenyan Masai territory, the number of cattle dropped by one-half in 1962. There is no certain knowledge as to whether such drastic fluctuations occurred at regular intervals previous to the British occupation, but that some such fluctuation did take place can be assumed on the basis of the Kjekshus thesis presented earlier. Whatever the facts, there is no doubt that in the modern, supposedly rationalized nation-state economies, such fluctuation, and its accompanying hardships for the human population, creates grave political

and social problems; hence, the attempt to get it under control. Thus, the economic development program plays another role: it is also a political-ecological control system, or an attempt at same.

The dominant theme of attempts at restoring some sort of balance in the East African ecosystem with respect to migratory pastoralism is sedentarization. This term is used loosely here, because its connotations are confusing and ambiguous. Perhaps "increasing nuclearization of settlement and social services" is a better term, but even here there are difficulties, because some groups have accepted such nuclearization up to the point of temporary residence for parts of the year, or as a place for the aged to retire. Or, it can mean little more than a shift from nomadism to a transhumant pattern, combined with seasonal cropping, which has some ameliorating effects, but by no means eliminates the degradation cycle of population and herd increase, range abuse, and so on.

Two or three principal forms have been devised in the development programs. In Kenya, the "group ranch" is the best known. This consists of the assignment of land titles to herding groups who are then expected to graze their stock within the ranch boundaries, adjusting numbers to the carrying capacity of the range, at whatever level may or may not be provided by water resources, pasture improvements, and the like. In Tanzania, the ranch was centered not so directly on an assignment of land, but rather on the nucleus of a village. "Villagization" was the term used previous to 1975, the year the ujamaa legislation was passed, requiring the village units to move toward some form of collective ownership and resource management.

Neither the group ranch nor the village ranch has been a success, at least in terms of the criteria embedded in the development programs. We have reviewed most of the reasons for these failures, and in this summary we shall not retrace the argument. We have also suggested that, in part, the failures may not have been as extensive as implied in the evaluative reports, since the whole system is in transition to a new state, and one cannot expect immediate and wholesale changes. Moreover, projects which were not necessarily designed to facilitate the conversion to the ranching regime may have assisted in a degree of settlement focus, even though they were not directly planned to do so. An example is the program of road building in northern Tanzania, noted previously: the data seem to show that settlements connected by the roads in the Masai areas appeared to be growing in size, with increasing numbers of Masai using the schools, agricultural extension facilities, and so on. In other words, social needs related to "sedentarization" were beginning to emerge. There are other indications of increasing focus of economic and social activity in the reports of the RIDEP local government and development offices.

The third formulation of the ranch solution to the pastoralist problem reviewed in this paper consisted of the cooperative ranches and ranching associations of Somalia. These appear to have native roots that precede the period of intensive development projects. Where local authorities are made responsible for the ranching operations of these organizations, a degree of success--better control of stocking and grazing--has been apparent; yet, these gains were not supported in the projects as fully as other schemes with less results.

The three or four attempts at promoting a ranching solution to the migratory range utilization pattern are all essentially ways of modifying land tenure. Land tenure is at the heart of the problems afflicting these pastoralist peoples and their governments, but the difficulty is that land tenure is not a single solution: equally important is land use. Or rather, land tenure and land use are really facets of the same thing: an adaptive-systemic approach to resource management and human productive activity. In the long course of human effort, such adaptive arrangements can be worked out by trial and error, by the evolution of social and technological controls, checks and balances--including a measure of conflict and competition. Whether these results can be achieved in a shorter period of time, by the typical mid-twentieth century procedure of consciously planned and engineered socioeconomic change, is still a matter of experiment.

It is at this point that the social infrastructure of pastoralism becomes relevant. We have shown that none of the development projects really addressed itself to this: emphasis was not placed on the human community and social organization, but rather on government-based boards and supervisory organizations. The "people emphasis" was singularly lacking in the livestock development projects; this was viewed by the development planners as an indirect accomplishment or consequence, or the business of the countries and not foreign aid programs. Whatever the reason, little or no acknowledgment was made of the fact that production of livestock takes place in authentic human communities, and that when the aims of production change, the social base must change simultaneously. Nomadism among pastoralists involves more than herd movement; it also includes human movement. Settlement in nucleated centers requires drastic changes in interaction, mutual aid, and authority patterns which cannot avoid creating new problems of adaptation in the economic sphere as well. It is in this field where anthropologists and other social scientists can play an important role in accommodation of these people to a new regime.

The materials assembled in this paper suggest a number of recommendations for future action. A few can be summarized:

1) More time needs to be devoted to planning and carrying out the desired changes. A degree of evolutionary experiment needs to be acknowledged and accepted.

2) Failures need to be accepted as an inherent part of socioeconomic change or development, and this suggests that the debt funding practiced by the World Bank Group and other agencies is inappropriate because it imposes time frames and performance standards which can be met, at best, only in part.

3) The "ranch" method of introducing restricted grazing and commercial herd management needs to evolve into a form in which communal land tenure combined with individual herd ownership is modified in some fashion. Individual landownership is one possibility; or a form approximating the grazing cooperative as it is practiced in Somalia, or in a more developed form, in parts of Canada and other Western countries. In the grazing co-op, herds are individually owned, but the land and water are managed collectively by the farmer-rancher members of the organization.

4) The ranch also needs full and adequate support in its early stages, to relieve the members of the financial burden of resource development. This means more time and more follow-up funding, but at the same time (and this is the delicate issue), gradual shifting of the financial burdens, at least in part, onto the members, to move toward a cooperative system.

5) The African governments need to clarify their priorities with respect to animal industry. In recent years, these have definitely been rising, as governments have become alarmed over possible protein shortages, and the need to support large numbers of pastoralists who are not paying their way, so to speak, by contributing to the national economy. The international food agencies issue numerous reports on food needs and problems, but these reports almost universally ignore animal sources of diet in favor of field crops, which have higher yields per unit of cultivated land. Yet, this approach ignores the fact that vast acreages in Eastern Africa can be productive only as loci of animal industry.

6) The highly specific technical, organizational, and economic development projects should be supplemented, or even replaced, by projects focusing on educational and training facilities (actually, USAID was beginning to move in this direction in the early 1980s). In a sense, the responsibility of the development agency should be merely to train nationals in the skills needed to perform the tasks associated with development--and then let the nation take its course--through experiment and learning-by-doing.

7) This might be supplemented further by a more resource-oriented approach, in which most funds are expended on adequate **development** of range and water resources. Coupled with training, education, and extension services, this might speed up the evolutionary process of adaptation more effectively than the highly specific, capital-intensive, high-technology approach, and over-bureaucratized organizations created in so many previous projects.

8) Specific projects aimed at experimenting with and supporting community and settlement organizations need to be funded. Actually the Tanzanian projects did refer to the villagization programs, and in this sense some relationship of the foreign-aid projects to the problem was in evidence. However, there was so little or no direct funding of research and experimental community organization and social service provisions. Such projects need to acknowledge the experimental nature of adaptive social organization; they cannot be expected to produce dramatic results in a short time.

9) This paper has treated land tenure primarily at a macrosocial level, with reference to general policy, or the "political ecology" of pastoralist society and development. This approach was shaped by the nature of the assignment: to examine the documentation of development projects and produce evaluations of evaluations, leading toward recommendations for future livestock project planning.

This approach omits the important microsocial dimension of land tenure. Or rather, one of the most important missing items of information in project papers concerns the way rights to grazing lands are distributed among individuals and kin groups, and how such distributions intersect government intentions

with respect to pastoralist development. For example, on the basis of the information provided in the project appraisal papers for Somalia, it is difficult to explain fully the apparent or implied opposition to the ranching cooperatives in favor of the grazing associations, when the former have been more successful economically and productively. Some hints are provided in the statements to the effect that the co-ops tend to enclose their grazing lands or at least keep transhumant herders, stricken by drought, from using them. But this, in all likelihood, is only part of the story. The probable missing information might concern the way informal grazing rights are allocated among families, herding groups, and localities, and how these are embedded in various local-national political structures. There are similar issues in, for example, northern Tanzania, where Masai informal rights to range areas conflict with agricultural settlements sponsored or encouraged by the government, and how these, in turn, are related to the district development authorities and their political involvements and preferences.

These are all obviously issues with which project papers cannot deal; yet, it is possible that in many instances these may be the crucial underlying or undescribed influences on project design and purpose.

Some ethnologically generated literature exists on such matters, but while this work describes land tenure at a tribal or even herding group level, it does so largely without reference to the political and development-policy issues discussed in this paper.

Consequently, the one recommendation for future research is for a series of case studies, carefully selected, of how land tenure and social organization intersect development policy and project implementation--not only in the livestock sector, but in other types of agriculture as well.

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