

J.O. Gefu

LIVESTOCK SYSTEMS RESEARCH PROGRAMME
NATIONAL ANIMAL PRODUCTION RESEARCH INSTITUTE, SHIKA
P.M.B. 1096, AHMADU BELLO UNIVERSITY
ZARIA - NIGERIA

ABSTRACT

Pastoralism as a "mode of production" has existed for hundreds of years under varying ecological conditions. In Nigeria, pastoral production is an important economic, social, socio-cultural activity. Apart from providing food, income and employment for the majority of Nigeria's rural dwellers, pastoral production accounts for approximately 40% of the national income derived from agricultural production.

The paper critically examines the changing conditions under which pastoral production had operated. An analysis of the interests and policies of both the Nigerian government as well as the interests of international agencies, and how such official positions have, over time, shaped pastoral production systems is undertaken.

The circumstances surrounding various government interventions with special reference to one form of pastoral system (nomadism) is examined. Based on the historical data presented, the paper concludes that the main interests of the colonial administration and those of the post-independence administrations centered on increasing livestock production and controlling pastoral activities. Strategies for improved and effective pastoral production are proffered.

INTRODUCTION

The past one hundred years have seen important changes in pastoral societies the world over. The issue of planned social change among pastoral producers has constituted a subject of concern for pastoral scholars as well as local and international agencies (see, for example, Frantz, 1982; Ministry of Agriculture and Natural Resources, 1973; Leys and Bates, 1974; Nelson, 1973; Meillassoux, 1974; Spencer, 1974; van Raay, 1975; Monod, 1975; Riesman, 1977; Dyson-Hudson and Smith, 1978; FAO, 1976; Horowitz, 1976; Berg, 1976; Sanford, 1977, 1976; Lovejoy and Baier, 1976; Scott, 1979; Galaty and Salzman, 1981, and Salzman, 1980). The

intensity and dimension of change may differ from region to region, but one common phenomenon remains the incorporation of pastoral societies into the world economic system. There has been development of marketing of pastoral products, migration to urban centers, and more recently, the creation of industrial centers. The pastoralist may be led to sell part of his livestock on the market or when, totally impoverished, he may be forced to enter an urban labour market where he can sell his labour power. The results are the same: the development of monetary and market relations. Existing economic and social relations are, therefore, changed very dramatically (UNESCO, 1979).

An understanding of the positions taken by the Nigerian government regarding livestock development is facilitated by examining changes in government interests and policies. The history of these shifts in interests, policies and programmes and how they have affected pastoral production forms the focus of the paper. A description of the changing conditions of pastoralism is presented. The extent to which these changing interests and policies of the Nigerian government are reflections of the interests of the core world is examined. The ways in which changes in interests and policies impinge on the present livestock production systems are explored.

Our discussion of changes in pastoral production will start with the protectorate period in Nigeria. Up to the time of British rule, pastoralists' social and economic life did not undergo the kind of changes in production strategies that was experienced under colonial domination (Dunbar, 1970; Frantz, 1981). The experience of pastoralists prior to 1900 was that of conflict with communities far removed from the immediate environment of the pastoralist. Constant raids were launched on their herds as inter-ethnic conflict was deepened (Hopen, 1958). The incidence of conflict and raids adversely affected pastoral activities and was worsened by the widespread rinderpest epidemic of 1887-1893 and aggravated by the famine of 1913-1914.

Generally, the activities of pastoralists have been affected by historical events in which, they either played a part or had to accommodate themselves. Thus, the pastoralists' life has been adapted to the exigencies of their very participation in the activities of the world of sedentarized agriculturists (through the exchange relationship that existed between them) and to the demands of the state (Stenning, 1959).

It follows therefore, that drastic changes were experienced by pastoralists especially as a result of frequent raids on their herds, natural disasters, and more importantly, the demands of the indigenous and British colonial administrations. While the economic and social organization of the pastoral producer was oriented primarily toward the maintenance of as large herds as possible, the intent of the British overlords was to force market involvement while ensuring the payment of cattle tax.

Cattle tax (Jangali) was imposed on pastoralists and assessment was based on the herd size. The unit of tax assessment was the household, with the household head responsible for making payments. Before the advent of the British, tax was paid in kind with livestock and/or animal products. The taxes and tributes that accrued to the traditional rulers (Emirs) were collected by representatives of the traditional ruler. But after the establishment of the protectorate, cattle tax was demanded in cash. The British administration still made use of the traditional rulers to collect cattle tax. The demand for cash as cattle tax may be seen as one of the measures taken by the colonial administration to promote large pastoral herds among pastoralists (Stenning, 1959). Some of the more important changes that occurred (mainly in the form of policies and programmes embarked upon by the colonial administration) are highlighted below.

COLONIAL PERIOD, CONTROL AND POLICIES

The colonial era in Nigeria can be dated between the establishment of the Protectorate in 1900 and the attainment of political independence in 1960. The British colonial administration, had taken at least indirect control of the area inhabited by the pastoral Fulani by 1903. At this time the ravages of the rinderpest epidemic were still very evident, so one of the first concerns of the colonial administration was to bring bovine diseases under effective control. The colonial government initiated disease control programmes in order to raise livestock production and ultimately generate higher income through the imposition and collection of a cattle tax.

The Fulani were consequently brought into the market economy as they sold their stock for "modern currency" in order to pay taxes. The introduction of cash seems to have forced the pastoralists to raise more stock than they really needed. Additional animals seems to have been raised and sold in order to pay their taxes. As higher cattle tax was levied, more animals needed to be raised and sold by pastoralists so as to meet government demands. It may not be an overstatement to suspect that pastoralists were assessed a relatively higher tax during the earlier periods of colonial domination. This is due to the ease with which tax assessment can be done on the basis of the size of herd owned. It was relatively more difficult to do tax assessment on agricultural products than on the number of animals owned.

In 1909, veterinary services were established within the then newly constituted Agricultural Department. Veterinary services offered included both curative and preventive care, through campaigns against diseases as well as the control and treatment of outbreaks. Vaccination and dipping centers were established for the treatment and care of animals as well as the prevention of serious bovine diseases. Initially, the services

were provided at minimal or no cost to the pastoralist. In later years, token fees began to be charged for certain veterinary services.

Realizing the importance of the livestock sub-sector, the colonial administration embarked upon the establishment of Farm Centers between 1921 and 1934. These centers provided feed supplements, mineral and veterinary supplies. Advice was also given in the centers as to how to improve the production of local livestock.

In addition to the Farm Centers, programmes of breed improvement were started. Livestock improvement was sought through selection of quality local breeds and by crossbreeding exotic animals with indigenous ones. Emphasis was put on crossbreeding as it was thought that the characteristics of the exotic breed (which was considered more productive than the indigenous breeds) would be passed on to the crosses. The issue of adaptability of both the exotic breed and their progeny to the environmental and climatic conditions did not seem to be prime at the time crossbreeding programmes were initiated.

In 1927, the Shika Stock Farm was established to provide improved breeds to the Farm Centers. The basis for establishing the Farm Centers may be viewed as an attempt to use Farm Centers as models to persuade pastoral producers and in particular nomadic pastoralists to settle permanently. Little success was, however, recorded by both the veterinary services and the Farm Centers. The intended beneficiaries of these programmes refused to "take advantage" of the services (Awogbade, 1982).

In the early 1900's the authorities saw a need to sedentarize pastoralists. The popular argument was that the future of livestock in Nigeria hinged on the sedentarization of the pastoralists. It was not until 1942, however, that the idea of sedentarization was actually put to work in the Jos area. Each (pastoral) producing unit or household was allocated four hectares of pasture land in the area with the hope that they would not only settle permanently but would also engage in mixed farming. However, the allocated patches of land were soon taken over by mining companies that quickly sprang up following the discovery and mining of tin in the Jos area.

This was one of the earliest attempts made by the colonial administration to settle pastoralists. Attempts continued but these met with resistance from the pastoralists (Dunbar, 1970). The difficulty the colonial administration faced in their attempts to settle pastoralists was one of the terms of reference of the expert study group of the International Bank for Reconstruction and Development (World Bank) between 1949 and 1954.

At the time of the World Bank study, conventional wisdom held that the free-range management system used by the pastoralist was counter-productive, wasteful (ie. resource-depleting), and undesirable. People felt that it should be discontinued by all possible means. The World Bank study did not only reiterate the assumptions of the colonial administration about pastoralism but also suggested concrete ways of altering their production systems.

Based on these assumptions the World Bank team recommended the establishment of such facilities as marketing channels, watering points, veterinary posts and, most significantly, the establishment of grazing reserves in major producing areas of Northern Nigeria. In recommending the establishment of grazing reserves, the bank argued that reserves would make it easier to provide the pastoralists with social infrastructure as well as to control and/or treat bovine diseases. This way, the pastoralists' basic needs would be better served, it was contended. Also, it was felt that livestock improvement efforts would be enhanced (eg. stock upgrading, crossbreeding with exotic animals, restocking, etc.). The general idea behind the grazing reserve programme was that better management practices would be used under conditions favourable to livestock production. There would be feeds and fodders, regular mineral and water supply; veterinary services would also be readily available to enhance animal health.

The recommendations of the World Bank team were accepted and put into action shortly after independence with the establishment of the Ruma Kukar-Jangarai grazing reserve. Since then, the concept of grazing reserve has been strictly applied to the problems of pastoral and livestock production in the country. It is evident therefore that the assumptions held by colonial administration concerning pastoral production had been passed on to the newly independent Nigerian administration. The new State shared the same notion that pastoralism (especially nomadism) is inefficient and needed to be radically altered. Consequently, the development programmes embarked upon by the post-colonial Nigerian administration reflected the already existing "antagonistic" attitude toward pastoral nomads.

Between the 1930's and the 1950's the colonial government embarked upon several stock-raising schemes in Northern Nigeria, but

none was mounted on a sufficiently large scale to make any drastic or far-reaching changes in the cattle situation. Some small multiplication centers' were started with the purpose of upgrading stock, but the scale of operations was so small that effects were not felt beyond a limited range (Dunbar, 1970:122).

These multiplication centers still exist to date under the name Livestock Improvement and Breeding Centers (LIBC). These LIBCs have a variety of sheep, goat and cattle breeds that are meant to be bred for improved progeny. Regretably, however, breeding and animal conditioning is minimal, while the distribution of "improved breeds" to local farmers is almost non-existent.

Early in the 1912's attempts to establish commercial ranches were made. Numerous requests were received by the then Governor of the Protectorates of Northern and Southern Nigeria, Frederick Lugard, for permission to establish large-scale commercial ranching schemes. These requests were usually for very large expanses of land and usually proposed to operate such ranches in the Australian or American style. For example, in 1913, a request was made for "not less than 2,400 square miles of grazing land... within say 150 miles of present or projected government railways" (Dunbar, 1970:104-5). Approval for such huge land area was not given by Lugard. His decision may have been influenced by the fear that the colonial administration would lose control of certain land areas if several requests had to be granted. Also, Lugard did not want to defy native laws which prohibited the sale of large pieces of property to expatriates. This last reason was particularly important because Lugard's experience in India and East Africa suggested that large-scale European enterprises, especially in East and South Africa had resulted in widespread disapproval and unrest. The colonial government did not want to risk political upheaval in Nigeria by allowing large-scale commercial enterprises.

Commercial ranching in the real sense of the word began in 1914 with the establishment of the African Ranches Limited. However, the company was forced out of business and subsequently sold its assets to the colonial government in 1923. The performance of the ranch was not favourable when compared with that of the pastoral Fulani. For example, in 1920, the colonial government visited the ranch and reported that although the "cattle were in very good condition, ...they did not differ materially from the native-owned herds... The ranch cattle were no more protected from rinderpest and other diseases than were native cattle" (Dunbar, 1970:117). Much of the pastoral policies and programmes conceptualized by the Colonial administration were inherited and pursued with vigour by the independent administration. The commitment of the new government to the pastoral programmes started by the colonial administration is evident in the different National Development Plans (see for example, Federal Ministry of Information, 1962; Federal Ministry of Economic Development, 1981).

Pastoral/livestock programmes and projects can be said to have been conceived and developed outside of their Nigerian context. Often, support comes from external interest groups. The push for the "modernization" of pastoral production often

accompanied externally funded programmes and projects with implications that are either unanticipated and/or counter-productive. Grazing reserve programmes were launched in order to offer incentives especially to nomadic pastoralists to settle permanently. Attempts made by both public and private concerns to "modernize" livestock production have met with varying degrees of successes and failures. These strategies, policies, and programmes which the post-colonial government inherited from their predecessors are examined in the section that follows.

POST-COLONIAL POLICIES AND PROGRAMMES

At independence, the World Bank report was reviewed and adopted as a consolidated programme named the "Fulani Amenities Programme Proposals." This programme proposed to offer, among other things, range improvement, fodder conservation for dry season feeding, improved pasturage, water development, and provision of supplementary feeds. The cost of this proposal was put at 3.5 million pounds sterling. A bill that legitimized this proposal was passed in 1965 and called the "Grazing Reserve Law". The intent of the law was to provide grazing rights and all-year resources to the pastoralists.

Immediately following independence several ranches were created in collaboration with international agencies. Three of the ranches (two of which were funded by the USAID) will be referred to here. Dunbar (1970:122) has succinctly described these projects:

The Bornu Ranch, one of the AID projects, is a breeding ranch twenty-two miles southeast of Maiduguri in the Gombole Forest Reserve. It was begun in 1963, and complete Nigerian control was planned at the termination of the original Six-Year Plan in 1968. By 1967, 20,000 acres had been fenced, and 300 Wadara cows had been purchased. An eventual herd of 1,000 breeding cows is planned, and this would mean a total herd of about 4,000, including bulls and young. The cattle would be supported not only by natural forage but also by improved pastures and cultivated fodder crops.

The other AID-supported ranch is the Manchok "fattening ranch" of 5,820 acres sited in a previously unused area just under the western scarp face of the Jos Plateau. It was also started in 1963. Although sited in a tsetse area, the ranch can be cleared and kept free of tsetse flies. The grass resource has not been diminished by severe over-grazing, as has much of the Jos Plateau. The Plateau can not only be counted on to supply cattle to the ranch for fattening, but it provides cottonseed for feed as well. In 1967 there were about 560 head of cattle on the ranch, and an actual annual production figure of 5,000 is planned.

Cattle are removed by road and rail to Kaduna...

The German venture, the Mokwa Ranch, is not only a "fattening ranch" but a research station as well. This ranch was established in 1964 on lands which were involved in the ill-fated Niger Agricultural Project in the early 1950's... In 1967 there were 600 cattle on this ranch of approximately ten square miles, and an eventual annual production figure of 5,000 is envisaged."

A situation arose in which foreign interests in the programmes of the Nigerian government continued to grow. These foreign interests can be documented in government statements of policy or development plans. All projects that were embarked upon after World War II were state-supported, with foreign agencies contributing part of the capital.

In the years of the second, third, and fourth National Development Plan periods (1970 through 1985) similar statements were made concerning pastoral and livestock production. The primary objective of government had always been to increase livestock production and thereby make more beef and dairy products available to the Nigerian population, particularly urban consumers. The concern of government had been typically expressed in such words as "the eradication of tsetse fly, the control of trypanosomiasis and other diseases and the settlement of nomadic herdsmen" (Federal Government of Nigeria, 1970:121). More specifically, government has identified a factor militating against increased and improved livestock production in the country:

Among the most serious deterrents to the breeding and improvement of cattle is the presence of tse-tse fly in the southern well-watered parts of the country. The majority of cattle are therefore concentrated in the seasonally dry and less humid belts across the extreme northern part of the country where conditions are too arid for tse-tse fly. The herdsmen are however forced to migrate in search of water and better pastures for their animals during the dry season and this nomadic way of life is not conducive to increased productivity and general livestock improvement. (Federal Government of Nigeria, 1970:121).

The removal of this bottleneck seemed to have been the main preoccupation of policy makers and major areas of policy were emphasized to tackle the problem:

establishment of large-scale feed depots and livestock multiplication farms for the production of parent stock;

subsidization of livestock inputs such as feeds, breeding stock, vaccines, drugs, equipment, etc. to livestock products;

encouragement of private ranching for beef, dairy, sheep and goat through the provision of improved pastures and fodder facilities for grazing, improved breeding stock and settlement schemes for the nomadic herdsmen;

intensification of veterinary and livestock production extension services... (Federal Government of Nigeria, 1981:106).

Of all the proposed government activities in the livestock sub-sector the establishment of grazing reserves seemed to have been emphasized the most. For example, the Third National Development Plan of 1975-80 proposed the establishment of a total of 22 million hectares in grazing reserves. By the end of 1977, only 2 million hectares had been acquired by both the State and Federal governments. The current agricultural policy (with special reference to the livestock sub-sector) is no much different from those adopted following independence, especially with regard to improving pastoral production systems.

The policies and programmes of the Nigerian State on livestock production may have been influenced by the different views that have been expressed about pastoralism. Arguments in favour and against pastoral nomadism have been advanced. It is to these arguments we turn attention to next. The strength and weakness of the arguments are examined in relation to government stance on livestock production.

VIEWS ON NOMADIC PASTORALISM

Arguments against nomadic pastoralism

Nomadic pastoralism has been criticized. Critics include international agencies such as the World Bank and the United States Agency for International Development as well as operators of the Nigerian State apparatus. The production system has been referred to by these critics as a counter-productive strategy for raising livestock. A variety of arguments have been advanced by antagonists of the nomadic pastoral system.

Some of the more anti-herder (anti-nomadism) sentiments have been expressed by Allan (1965) who argued that "nomadic pastoralism is inherently self-destructive." Examples of antagonistic expressions directed toward nomadic pastoralism come from Pratt and Gwynne (1977). They contend that "in most cases... the people (nomadic pastoralists) are tied to a way of life that

limits their own development and that leads to overstocking of the land."

Commenting on the Nigerian situation, Professor V. A. Oyenuga has argued that ranches and such similar commercial-oriented and capital intensive strategies could lead to increased livestock production. He, therefore, gave his full support to ranching schemes by contending that "the required production level can no longer be met by adhering solely to the traditional practice... It calls for well-managed, heavily capitalized ranch systems utilizing feedlots on an intensive management basis" (Oyenuga, 1973:395).

The recent decline in nomadic pastoralism has been cited as an evidence of the fragility and inevitable replacement of the nomadic strategy of livestock production. Contraction of nomadic pastoralism has been due in large part to the increasing pressure on grazing land. Formerly grazed land patches have been put into alternative uses for industrial, agricultural, and urban development projects. Grazing land has been observed to have declined from 67 percent of Nigeria's total land in 1951 to an estimated 39 percent in 1986 (Federal Livestock Department, 1978).

Alao (1973) contended that "the traditional methods of allowing breeds of livestock... to fend for themselves is most undesirable." He therefore called for a 'modern' method of production which "requires high and superior management ability with economic production for the market in view" (Alao, 1973:54). These views concerning the need to "transform a 'traditional' livestock system to improve human nutrition (especially) in Tropical Africa" (Sullivan, et.al., 1980), has been widely expressed. Referring to the Angolan situation, de Carvalho, (1974) observed that a widely held idea in development planning is that "the traditional patterns of cattle raising in the pastoral regions of Africa can and should be changed so that these regions become larger producers and direct suppliers of meat... Consequently the policy for the African pastoralist area has been to replace the present "traditional" small African cattle-raising units (family herds) with "modern" large-scale cattle ranches" (de Carvalho, 1974:200).

There is a general view of nomadic pastoralists as primitive and conservative because of the claim that they are resistant to changes that have been introduced. Indeed, some researchers consider resistance to change as a common general characteristic of the pastoralist. They have thus encouraged the State to adopt policies that introduce huge commercial ranching and other pastoral projects, in an attempt to improve the production system. It has therefore, been argued by antagonists of pastoralism that change in the system of pastoral nomadism is inevitable if any improvement in production is to be attained. Change has been sought in the form of projects that attempted to

replace the indigenous system. Yet little evidence exists to justify past government programmes and projects. (See, for example, Dunbar, 1970; Dasmant et. al., 1974; Konczachi, 1978; Ghashgai, 1981; Oxby, 1984).

Arguments in favor of nomadic pastoralism

Supporters of the migratory pastoral system emphasize the advantages of nomadism as a response to "seasonal changes in rainfall and drought, the accumulated expertise of herders, and the general failure of ranching schemes... which produce exclusively for the market" (Eicher and Baker, 1982:170). They argue that the nomadic strategy has enabled these herdsmen to maximize resources at their disposal without causing environmental degradation (Hickey, 1978). The strategy presents a "safety valve" function for traditional producers as well as for the ranching complexes government planners have embarked upon (Ayuka, 1978; Hickey, 1978; Haaland, 1977).

Nomadic pastoralism has been seen as a rational strategy with producers acting rationally and adopting innovations that would enhance their production. The argument put forward by antagonists of pastoral nomadism has been countered by protagonists of the system. The latter argue that nomadic pastoralists are very dynamic, accepting change where such changes are proven utilitarian to the pastoral process (Dyson-Hudson, 1970; Schneider, 1962 ; Breman, 1983). There is, therefore, an ongoing controversy as to what the best strategy to enhance livestock production is.

EVALUATING GOVERNMENT STANCES ON PASTORALISM

Fundamental to understanding livestock development process in Nigeria is the deep-rooted assumption of colonial and indigenous governments that nomadic pastoralism (especially the nomadic form) is incompatible with standards of "modern" and "civilized" conduct and values. Pastoralists are often viewed as "traditional" or "primitive" in their production strategies; so any policy which introduced changes in their strategy of production was considered not only necessary but justified.

A variety of arguments have been put forward as a rationale for intervention and development efforts in the area of pastoral nomads. Oxby (1975:4) has listed eight of such arguments:

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.

In Nigeria, the livestock/pastoral policy of the colonial and indigenous administrations can be viewed from the core/periphery relationship complex in which livestock production is organized or re-organized to benefit the center of the core and/or the center of the periphery. The bulk of the measures taken by the different administrations were often said to be directed at protecting the ecology from serious degradation, and sedentarization was thought to be the answer to resource depletion and ecological degradation.

The overgrazing and environmental degradation allegedly caused by nomadic pastoralists does not appear to be as serious as is often stated. Frequently "warnings" have been sounded regarding the dangers posed to the environment by migratory pastoralists (see, for example, Federal Ministry of Information, 1962; Federal Government of Nigeria, 1981; Alao, 1975; Oyenuga, 1973; Sullivan, et al., 1976). It seems incredible that

people practicing so "self-destructive" an economy could have survived. Yet they were wedded to behaviour hundreds if not thousands of years old, hewing to ancestral traditions which are, to the sympathetic but objective observer, so dysfunctional to themselves, to their habitat, and to the national states in which they are subjects (Horowitz, 1979:24).

If the ecology has been so impoverished to the extent that it has been portrayed (over the past three decades), very little would be left of the said ecology today.

It should be emphasized that pastoralists would not like to jeopardize their livelihood by making unwise decisions regarding the utilization of the "gifts of nature". They are aware of the seriousness of any act of resource mis-management as they are cognisant of the importance of natural grazing to their continued existence. In planning and implementing livestock production projects policy formulators have constantly ignored the indigenous mode of life of pastoral nomads. They assume that their system is inefficient, wasteful, and unproductive. In part these assumptions and negative attitudes are the result of the fact that operators of the state apparatus possess to a different

socio-cultural, political and economic orientation than the pastoral nomads. It follows therefore that programmes of pastoral and livestock improvement seldom succeed and often result in unintended and unforeseen consequences.

It should, however, be noted that State intervention is not necessarily bad or undesirable. In as much as some amount of intervention is necessary and probably inevitable, the adverse consequences of intervention is of great importance and our concern here. Any intervention in the present pastoral production system should take into consideration the realities within which the pastoralist operates. Intervention should be formulated in ways that the net gain accrues to the pastoralists and society in general rather than serving the needs of interest groups. Programmes and projects embarked upon by the Nigerian State seldom serve the immediate needs of the producers as often intended. Rather, the conditions set by donor agencies regarding programme administration are usually pursued. Conditions are often set in ways that special interests benefit in the long run from programmes and projects that have received agencies support.

Reviewing programmes of pastoral development in Sub-Saharan Africa, Goldschmidt (1981), draws the conclusion that the schemes seldom succeeded because they attempted to impose a foreign method of production. A similar observation has been made regarding such schemes and programmes in Nigeria. Awogbade (1981:329) noted that "programmes that are aimed at improving the quality of pastoral practices almost invariably fail." Indeed, Galaty (1981) contends that negative effects are often experienced by pastoralists and small-scale livestock producers, whose resources are diminished for the sake of commercial production. Galaty and Goldschmidt are not alone in highlighting the undesirable consequences of sedentarizing nomads. Aronson (1980), Salzman (1980), Konczacki (1978), all have observed that sedentarization actually inhibits efficient continuation of pastoralism and increases the degradation of the environment. This contradicts government's intention to develop the livestock industry. In Nigeria, evidence abounds regarding the effects of sedentarization. Where sedentarization (usually spontaneous) has occurred, nomadic pastoralists are converted into agro-pastoralists with marginal outputs of both livestock and crop production. They attempt to derive the most they can from the few resources (land, water, etc.) that are available to them. Neither do they produce crops nor livestock in any appreciable quantity/quality. The reasons for taking up permanent residence are other than the desire to increase production. More often, agriculturists are turned into pastoral producers, thereby increasing the capitalization of pastoral production.

The Nigerian government has been establishing grazing reserves to provide forage to pastoralists. However, serious problems of overstocking (stock pressures) and range deterioration have been encountered. This is probably one of the

numerous dimensions of land held in common (Gilles and Jamtgaard, 1982; Artz, 1986). When nomadic pastoralists settle and practice crop farming, especially in semi-arid and arid zones, the combined activity of livestock and crop raising tends to increase environmental degradation.

Konczacki (1978) notes that the transition to semi-nomadic or sedentarized patterns of land use, by limiting movement and promoting concentration around watering points led to the destruction of rangelands. This view has been strongly expressed by Dasman, et. al. (1974). Overstocking and consequent overgrazing usually results in a decline of the quality of livestock following sedentarization.

Furthermore, the health of livestock have been adversely affected as there is a build-up of disease and parasitic infections around settlement areas (Dunbar, 1970). Notable among countries which have had strong programmes for the elimination of nomadic pastoralism are Egypt and Iran. These countries have suffered significant reduction in the production of meat and other livestock products.

Sedentarized pastoralists in Nigeria have smaller herds since settling. A change from pastoralism to intensive crop/livestock raising in an area of unstable ecology like the Sahel region of Nigeria could turn such areas into what Konczacki (1978) called "dust bowls."

There is need to re-establish a "proper balance between carrying capacities and actual livestock numbers within the framework of institutions that do not overlook the merits of the 'traditional' and well-established systems of regulating communal grazing but take into consideration the requirements and technical possibilities offered by 'modern' husbandry systems" (Hrabovszky, 1981:13).

On the other hand, large herds are inefficient means of exploiting rangeland vegetation. Large concentrations of animals may destroy vegetation and inefficiently utilize pastures.

The central problem with programmes of sedentarization seems to be that of rangeland deterioration; sedentarization therefore may not be workable as a unique solution to the problems of livestock production in Nigeria. It should be observed that commercial agricultural production in general does not seem to have improved the living standards of direct producers, but rather has been instrumental to their impoverishment. The profits from the expansion of commercial production activities, have served only to aggravate the life conditions of the producers (Bourgeot, 1981). Swift (1979) argued that increase in marketed livestock

has not reflected any sustained increase in pastoral production; rather 'the demand-led boom' in marketed livestock has been created by superimposing a modern market operation on a largely traditional production system; this has induced a shift from a principally subsistence economy to a much more market-oriented one without real development (Swift, 1979:453).

Cole (1981), observed that Bedouin pastoralism, despite the high degree of sedentarization and specialization, is one that "does not lead to increased production of anything beyond the bare necessities" (Cole, 1981:130). This suggests that sedentarization may not necessarily result in increased holdings in livestock as the pastoralist may not be willing to produce in excess of what he thinks can meet his needs.

SUMMARY AND CONCLUSIONS

It has been shown above that the assumption that improvement of livestock/pastoral production can be achieved through programmes of sedentarization and the introduction of exotic technologies has not been entirely sustained. The continuation and intensification of sedentarization policies can be explained by the political, economic, and social control government seeks to have over pastoralists. It may therefore be argued that the role of the capitalist (dependent) State in pastoral production is one caught in the contradiction of promoting capitalist accumulation while at the same time attempting to fulfill the demands or needs of the general public. Government policies aim at increasing and improving livestock production, at the same time raising the living standards of the pastoralists. However, livestock production is neither adequate to meet the expectations and goals of government nor is it adequate to meet the rising demands of the Nigerian society.

Going by the recent statement of policy on agriculture which gave prominence to sedentarization of nomadic pastoralists, there still seems to exist loopholes in the issue of land redistribution especially with regard to pasture land for livestock production. The land on which the pastoralists would be settled belong to individuals and/or corporate bodies. Difficulties in alienating land arise because it is often difficult to reach a consensus among the land-owners on the terms upon which their land would be alienated. It is easier to secure the use of a piece of land for a limited time period than to acquire large piece of land for permanent use by people from outside the community.

Government need, therefore, review the Land Use Act to make land easily available for agricultural production and pastoral/livestock activities in particular. Since nomadic pastoralists do not usually have rights of land ownership and if

they do not hope to legally acquire land, they must depend on the hospitality and goodwill of the agricultural communities to gain access to the use of community resources. If government policy is to settle nomadic pastoralists is to succeed, it is imperative that land reforms be simultaneously embarked upon so that problems associated with land-use by both pastoral and agricultural peoples would be minimized.

REFERENCES

- Alao, J. Ade (1973). "Analysis of some factors limiting the development of livestock industry in Nigeria." Paper read at the 9th Annual Conference of Agricultural Society of Nigeria, July 2-6.
- (1971). Community structure and modernization of agriculture: An analysis of factors influencing the adoption of farm practices among Nigerian farmers. Unpublished Ph.D. Dissertation, Cornell University.
- Allan, W. (1965). The African Husbandman. Edinburgh, Oliver and Boyd.
- Aronson, Dan (1980). "Must nomads settle: Some notes towards policy on the future of pastoralism." In P. Salzman (ed.) When nomads settle: Processes of sedentarization as adoption and response. Praeger.
- Artz, Neal (1986). Personal communications.
- Awogbade, M. O. (1981). "Livestock development and range use in Nigeria." In Galaty, et al. The Future of pastoral people. Pp 325-333.
- 1982 Fulani pastoralism: Jos case study, Zaria, Nigeria: Ahmadu Bello University.
- Ayuko, L. (1978). Ranch organization structures. Summary of papers presented at an ILCA Conference in Addis Ababa, February 25-29. Addis Ababa, ILCA Bulletin No. 9.
- Berg, E. (1976). The economic impact of drought and inflation in the Sahel (Discussion Papers, No. 51). Ann Arbor: Center for Research on Economic Development, University of Michigan.
- Bourgeot, A. (1981). "Nomadic pastoral society and the market." In Galaty and Salzman (eds.). Change and development in nomadic and pastoral societies. E.J. Brill-Leiden.
- Breman, H. and C. T. de Wit (1983). "Rangeland productivity and exploitation in the Sahel" Science Vol. 221 Number 4618: 1341-1347.
- Cole, D.P. (1981). "Boudouin and change in Saudi Arabia." In Galaty and Salzman (eds.) Change and development in nomadic and pastoral societies. E.J. Brill-leiden

- Dasman, R.F., J.P. Milton, and P.H. Freeman (1974). Ecological principles of economic development. London: John Wiley and Sons.
- De Carvalho, E.C. (1974). "Traditional and Modern" patterns of cattle raising in southwestern Angola: A critical evaluation of change from pastoralism to ranching." The Journal of Developing Areas 8 (January): 199-226.
- Dunbar, G.S. (1970). "African Ranches Limited, 1914-1931: An ill-fated Stockraising enterprise in Northern Nigeria." Annals of the Association of American Geographers 60 (1): 102-123.
- Dyson-Hudson, N. (1970). "Factors inhibiting changes in African pastoral society: The Karimojong of Northeast Uganda." In Middleton, J. (ed.) Black Africa: Its Peoples and their Cultures today. New York: Macmillan.
- Dyson-Hudson, R. and E. A. Smith (1978). "Human territoriality: An ecological assesment." American Anthropologist. 80: 21-41.
- Eicher, Carl K. and D.C. Baker (1982). Research on agricultural development in Sub-Saharan Africa: A critical survey. MSU International Development Paper No. 1 Department of Agricultural Economics. Michigan State University. East Lansing.
- Federal Government of Nigeria (1981). The Fourth National Development Plan, 1981-85. Lagos: Federal Government Printer.
- Federal Office of Statistics (1976). Nigeria Trade Summary, Lagos.
- Federal Ministry of Information, Lagos (1962). First National Development Plan 1962-68. Government Printers, Lagos-Nigeria.
- Food and Agricultural Organization (1976). Perspective study on agricultural development in the Sahelian countries 1975-1990, 2 Vols. Rome: United Nations Food and Agricultural Organization (Publication No. PS/SAH/76/ESP/1/Ed.

- Frantz, C. (1981). "The open Niche, pastoralism, and sedentarization in the Manbila grassland of Nigeria." In Galaty, et al. (eds.) *The Future of Pastoral Peoples*. Ottawa: International Development Centre.
- (1982). "Settlement and migration among pastoral Fulbe in Nigeria and Cameroun." In Salzman, P.C. (ed.) *Nomadic and Pastoral Peoples: Africa and Latin America: Studies in Third World Societies No. 17*, pp. 57-94.
- Galaty, J.G. (1981). "Nomadic pastoralists and social change processes and perspectives." In Galaty and Salzman (eds.) Change and Development in nomadic and pastoral societies. E.J. Brill-Leiden.
- Galaty, J. G. and P. C. Salzman (eds.) (1981). *Change and development in Nomadic and pastoral societies*. Leiden: E. L. Brill.
- Ghashghai, H.B. (1981). The question of settlement of nomads of Iran. Ph.D. Dissertation Abstract. United States International University.
- Gilles, J.L. and K. Jamtgaard (1982). "Overgrazing in pastoral areas." *Nomadic Peoples No. 10* (April): 1-10.
- Goldschmidt, W. (1981). "The future of pastoral economic development programs in Africa." In Galaty, J.G. et al. (eds.) *The Future of Pastoral Peoples*. Ottawa: International Development Centre.
- Haaland, G. (1977). "Pastoral systems of production: The socio-cultural context and some economic and ecological implications." In O'Keefe, P. and B. Wiser (eds.) *Landuse and Development*. Pp. 179-193. London: International African Institute.
- Hickey, J.V. (1978). "Fulani nomadism and herd maximization: A model for government mixed farming and ranching schemes." In Hyder, D.N. (ed.) *Proceedings of the First Rangeland Congress*. Denver, Colorado.
- Hopen, C.E. (1958). *The pastoral Fulbe family in Gwandu*. London, Oxford University Press.
- Horowitz, M. (ed.) (1976). *Colloquium on the effects of drought on the productive strategies of Sudano-Sahelian herdsman and farmers*. Binghamton, New York: Institute for Development Anthropology.
- (1979). *The sociology of pastoralism and African livestock projects*. AID Program Evaluation Discussion Paper No. 6. USAID.

- Hrabovszky, J.P. (1981). "Livestock development: Toward 2000; with special reference to developing countries." *World Animal Review* 40: 2-12.
- (1953). An outline of Nigerian vegetation. Government Printer. Lagos, second edition.
- Konczacki, Z.A. (1978). The economics of pastoralism: A case study of Sub-Saharan Africa. London: Frank Case.
- Leibenstein, Harvey (1957). Economic backwardness and economic growth. Cambridge: University Press.
- Lovejoy, P. E. and S. Baire (1976). The desert-side economy of the central Sudan. In Glantz, M. (ed.) The politics of national disaster: The case of the Sahel drought, 145-175, New York: Praeger.
- Meillassoux, C. (1974). "Development or exploitation: Is the Sahel famine good business?" *Review of African Political Economy* 1:27-33.
- Ministry of Agriculture and Natural Resources, Lagos (1973). Survey of the agricultural potential of the Mambila Plateau in the context of Nigerian Economy, 2 Vols. Rome: I.I., DE.CO., S.p.A. (Livestock Development Co.). (Reprinted 1976).
- Monod, T. (ed) (1975). Pastoralism in Tropical Africa. Thirteenth International African Seminar (Niamey, December 13-21) London. International African Institute and Oxford University Press. 6.
- Nelson, C. (ed.) (1973). The desert and the sown: Nomads in the wider society (Research Series No. 21) Berkeley: Institute of International Relations, University of California.
- Oxby, Clare (1984). "Settlement Schemes for herders in the Subhumid Tropics of West Africa: Issues of land rights and ethnicity." *Development Policy Review* 2 (2): 217-233.
- Oyenuga, V.A. (1973). "Intensive animal production on a subsistence scale." In Reid, R.L. (ed.) Proceedings of Third World Conference on Animal Production. Melbourne pp. 393-400.
- Riesman, P. (1977). The Fulani in a development context: The relevance of cultural traditions for coping with change and crisis. Mimeographed.

- Salzman, P. C. (1980). "Introduction: Processes of sedentarization as adoption response." In Salzman, P (ed.) When nomads settle.
- Sanford, Steve (1976). Pastoralism under pressure. ODI Review No. 2: 45-68.
- (1977). The design and management of pastoral development: Human pastoral populations (Pastoral Network Papers, No. 2c) London: Overseas Development Institute, University of London.
- Schneider, H.K. (1962). "Pakot resistance to change." In Bascom, W. and M. Herscovits (eds.) Community and change in African Cultures. Chicago: University of Chicago Press.
- Scott, E. P. (1979). "Land use change in the harsh lands of West Africa." African Studies Review 22: 1-24.
- Spencer, P. (1974). "Drought and the commitment to growth." African Affairs 73: 419-427.
- Stenning, D.J. (1959). Savannah nomads. A study of the Wodaabe pastoral Fulani of Western Bornu Province. London, Oxford University Press.
- Sullivan, G.M., et al. (1980). "Transforming a traditional forage/livestock system to improve human nutrition in Tropical Africa." Journal of Range Management 33 (3): 174-178.
- Swift, Jeremy (1979). "The development of livestock trading in a nomadic pastoral economy: The Somali case." In: Pastoral production and society: Proceedings of the international meeting on nomadic pastoralism. Cambridge University Press. London.
- UNESCO (1979). Tropical grazing land ecosystems: A state-of-knowledge report prepared by Unesco/UNEP/FAO. Natural Research. Research No. XVI.
- van Raay, J.G.T. (1975). Rural planning in a Savannah region. University Press. Rotterdam, Holland.