

THE EXPANSION AND ADAPTATION
OF
FULBE PASTORALISM TO SUBHUMID
AND HUMID CONDITIONS IN NIGERIA

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The Fulbe are the most widespread of the pastoral peoples of Nigeria and their society is highly fragmented and diversified. The conventional stereotype of the Fulbe as exploiting the semi-arid regions of Northern Nigeria and only using the Middle Belt as a dry season grazing refuge is gradually becoming less valid. Fulbe are herding virtually down to the sea-coast and now have a year-round presence on the southern limits of the derived savannah and into the forest edge.

There are several factors responsible for the southward expansion. The most important of these are;

- a) Expansion of cultivation in the semi-arid zone
- b) A succession of low rainfall years beginning in the early 1970s
- c) Greater availability of Western veterinary medicines
- d) Decline tsetse challenge in the Middle Belt

Once the pastoralists become established in an unfamiliar ecology and social nexus they must make a series of adaptations to the new environment. The most important of these are;

- a) Decline of milk production and development of beef herds
- b) Exchange of cattle breeds to more locally adapted types
- c) Elimination of sheep production
- d) Fragmentation of traditional social and authority structures

The findings of the National Livestock Resource Survey, 1989-1991, make it possible to describe the present situation with more confidence and to analyse the factors that have led to this dramatic relocation of the herds.

Geographical Conventions

Administrative boundaries change frequently in Nigeria. A 'state creation exercise' took place in 1991 and the creation of further states has not been ruled out. For this reason I have avoided these names and used geographical regions, such as 'Adamawa', 'Middle Belt' and 'Borno' or referred to the hinterland of large towns, such as Oyo or Enugu. These are marked on the base map (Map 1).

Clan Names

The names of the Fulbe leygi, or clans, are cited in a bewildering variety of forms both by informants and in printed texts. I have preferred the Fulfulde form and have normalised all citations to a single transcription.

1. Introduction

The Fulbe, or Fulani, are the best known and most numerous of all the pastoral groups in Nigeria. They are described in a number of classic monographs, most notably St. Croix (1944), Hopen (1958), and Stenning (1959) who studied pastoral groups in the semi-arid regions. By contrast, for the humid and subhumid regions there is relatively little descriptive material. Fricke's (1979) study of pastoralism in Nigeria concluded from an analysis of tax and slaughterhouse records that there had been a general shift southward of pastoral herds. Awogbade (1983) described the Fulbe on the Jos Plateau, while some of the papers in Kaufmann, Chater & Blench (1986) deal with pastoralists in southern Zaria. Ezeomah (1987) reviews some of the settlement schemes proposed for the Nigerian Fulbe in the rather specific perspective of their educational implications.

These writings have a specific feature in common -they cement the strong identification in the minds of both researchers and the Nigerian public between Fulbe pastoralists and 'the North', however vaguely defined. Their distribution and identity is described in greater detail by Blench (1984, 1985, 1991) who points out that conventional stereotypes of the Fulbe as living in Northern Nigeria are becoming less and less true, year by year. Little is known, at present, about Fulbe presence on the southern limits of the derived savannah and along the forest edge. However, two major surveys commissioned by the Nigerian government in the past decade have contributed to a major reformulation of the conventional stereotypes of Fulbe pastoralism (RIM, 1984, 1989, 1992). This paper¹ will develop those studies and other recent work to try and redraw the map, both geographically and sociologically.

The argument has essentially two strands; a description of the current situation and a sketching of the motives for the changes in progress, and an outline of the consequences, both in terms of pastoral management systems and for the integration of pastoralists with the farming communities.

2. The Present Situation

2.1 Historical Background to Fulbe pastoralism in the region of Nigeria

The exact era when Fulbe pastoralists first moved into Nigeria is unknown, but it is generally assumed that they first arrived as nomads in the far north between the 14th and 16th centuries. During this early period they were almost certainly confined to a narrow strip along the northern border of what is today Nigeria. The factors preventing their southern expansion remain controversial, but it is likely that attempts to move south of this line would have resulted in major losses from the trypanosomiasis. Before the spread of firearms in West Africa, human population densities were low and wild animal numbers still high. This would have created a high level of tsetse challenge for the non-trypanotolerant zebu owned by the Fulbe (Blench 1993).

Through processes that remain obscure, by the early nineteenth century the Fulbe had developed an urban, sedentary class, especially of religious scholars. Their commitment to Islam and the dedication of their followers stimulated the development of an effective military machine. The Jihad of Usman dan Fodio was successfully launched in Sokoto in 1804. Within thirty years, the Hausa kingdoms and a number of peripheral kingdoms, such as Borgu and Nupe, had fallen to the Fulbe. This rapidly accentuated the difference between the pastoralists (*Fulbe na'i*) and the urban Fulbe (*Fulbe wuro*). The urban Fulbe took on many characteristics of the peoples they ruled and gradually lost their language, although they have retained a cultural bond with the pastoralists which persists up to the present.

One of the effects of political and military expansion was to clear a way for the southward movement of pastoralists. At this period the herders could only exploit the pastures of the northern wetlands (such as the Hadejia-Jama'are river basin) and the subhumid 'Middle Belt' in the dry season -when the rains came the bulk of the herds would be sent northwards into the semi-arid zone to prevent diseases carried by tsetse and other biting flies. After the pacification of the Nupe hinterland and the establishment of Raba as a capital of the Fulbe in the 1820s, pastoralists began to move down to the low-lying pastures along the Niger River (RIM, 1989). They may even have pressed further into the derived savannah of northern Oyo if Adams (1823:78) is correct in his reference to cheese-production in this region.

¹The information for this paper largely derives from the National Livestock Resource Survey of Nigeria in 1990 (RIM, 1992, Vols. I-VI). I am indebted to the numerous reports from field researchers in various parts of the country for information on the distribution of the Fulbe. This data has been combined with my own field observations over the period 1979-1990. I should especially like to thank Alhaji Natta Ala Sambo and Dr. C. Di Domenico for their comments in revising the southern boundaries of Fulbe expansion. My thanks also to Adrian Rayson, who put the draft maps into professional form.

More attractive, however, were the high altitude grasslands, since disease risks were lower and pastures more palatable for the zebu. The Fulbe began to settle the plains around the Emirate of Bauchi and move up onto the grasslands of the Jos Plateau (Morrison 1982). A parallel expansion in Cameroon at the same time led to the gradual colonisation of the grassy uplands and humid savannas throughout the nineteenth century (Boutrais 1974, 1986). During its last two decades these pastoralists began to move westwards again and to colonise the Mambila and Fali Plateaux (RIM 1984 & Blench 1991).

The second impetus to southward expansion of the pastoralists was the relative security of the colonial era. The threat of armed raids on grazing herds was largely eliminated, a factor which, according to Awogbade (1983 8-10), had kept the herds off the Jos Plateau until the colonial era. This was combined with the growth of entrepôts around railheads and a parallel expansion of Hausa traders who created a market for dairy products and acted as entrepreneurs in the livestock trade.

More controversial is the role played by disease. There is little doubt that zebu cattle are progressively threatened by disease in more humid regions -however, the exact diseases and factors responsible remain disputed. The colonial regime instituted both tsetse control measures and made available a range of new veterinary medicines. The tsetse control programmes themselves may have opened new pastures. Alternatively, the expansion of population in the Middle Belt coincidentally acted to eliminate both the vectors (by hunting out the wild animals) and the forest habitats (cut down for agricultural land) of the tsetse fly (Bourn, 1983). By the time of Independence in 1960, the Fulbe had begun to stay all year round in the derived savannah north of Oyo town and to line both banks of the Niger-Benue system.

During the decades 1960-1990 a new force began to come into play -the expansion of cultivation in the semi-arid zone. The semi-arid zone has always been more populous than the Middle Belt, as the major location for the towns central to the Hausa Emirates². However, projecting back the census figure to the precolonial era suggests that the human population for the whole Nigerian region may have been as low as five million in the late nineteenth century. Comparison with the 1991 figure of 88.5 million makes it clear how pastoralists and cultivators could have co-existed in the earlier period. As the pressure on arable land in the semi-arid zone increased, soil fertility decreased. Farmers were obliged to move to regions of uncleared bush or to increase their holding size, a problematic strategy in most areas. This evidently tended to exclude the mobile pastoralists who traditionally treated uncultivated bush as common resource. Pastoralists were then forced to seek new pastures, either further south or in neighbouring West African countries (Blench, forthcoming,a).

2.2 Regional Aspects of Migration in the Humid Zones

The classic stereotype of the Fulbe migrations common in the colonial period was a seasonal migration between the semi-arid north and the dry-season pastures along the Niger-Benue system (see, for example, Glover, 1960). As the rains gathered pace, the tsetse populations expanded and herders were driven back northwards. Despite this, the gradual exploration of southern pastures led to individuals discovering methods of remaining in these regions all year round. This section describes the movement and impact of Fulbe in the different regions of the south and also summarises the movement to the towns of the traders and settled Fulbe³.

The movement into the south-west was markedly earlier than in the centre and south-east of the country for both ecological and religious/cultural reasons. The climatic regime of the south-west is such that the derived savanna loops southwards west of Oyo, almost reaching the coast in Benin and the Togolese Republic. This creates relatively open land without the high humidity associated with forest proper and therefore reduces the disease risk to zebu cattle (Blench, forthcoming,b). Map 2 superimposes the southern limit of Fulbe migration in the dry season of 1990 on a simplified vegetation map and also marks the location of isolated 'fattening herds'.

Combined with the ecology were cultural factors, particularly Islam. Islam is widespread among the Yoruba, and dominant in Ilorin and the surrounding area where the pastoralists first entered the region. Since almost all the Fulbe are also Muslim, the potential for establishing exchange relations with the local population was greater than further east. In regions where Islam has had virtually no impact, among the Igbo and Cross River peoples, such relationships are harder to build and conflicts more likely to arise.

²see density maps in Barbour et al., 1982, based on the 1963 census.

³This section is largely based on relevant parts of the state reports in RIM (1992,III).

2.2.1 The south-west

In the south-west, Fulbe pastoralists were established early in the nineteenth century in the region of Borgu. The semi-arid savannas of Borgu, the sparsely populated region between Ilorin and the Muslim courts of Nikki and Kande (in present-day Benin) favoured the development of large herds of keteku cattle (a stabilised cross between the zebu and the trypanotolerant humpless breeds). From there, the Fulbe moved to the region around Oyo and virtually as far as Abeokuta in the colonial era. Some of the community leaders in this region claimed to have been born there in the 1930s.

Three main groups can be identified in the derived savannah north of Oyo;

The Borgu'en, agro-pastoralists, who herd a mixture of zebu and keteku, and who moved in from the hinterland of Ilorin in the 1960s and are now more or less settled in the Shaki area. They have developed exchange relationships with the local communities and speak fluent Yoruba, although the older generation still retains some Fulfulde and Hausa. Crop farming has become so important to their household economy that they grow cash crops as well as staples. They still have some cattle, and generate additional income by selling *wara* (cheese) to the Yoruba.

The Hausa'en, who are originally from the Sokoto area, began to arrive in 1974/5, when they were driven south by the drought. Originally they herded Sokoto Gudali cattle but they are now adapting their herds to include local breeds. Like the Borgu'en, they are beginning to farm and to adopt other aspects of local culture.

A third wave of Fulbe, a composite of many clans, began to arrive from the Sokoto region in the 1980s, again impelled by the failure of the rains. The principal *leyyi* (clans) represented in these movements were the Daneeji, Galeeji, Silsilbe, and Natirbe. Slightly to the east, in a parallel movement, clans from the Kano-Katsina region, most notably the Pagaya'en and Jawbe, have moved into the region between Ilorin and Kabba. They have not yet settled, and are tending to come into conflict with local farmers and with the established Fulbe.

Apart from these cattle pastoralists, another more surprising group has begun to migrate seasonally to the Oyo area: the Uda'en. They are specialised sheep pastoralists, more familiar from the semi-arid regions of Borno, who herd the distinctive black and white Uda breed of sheep. Herds of Uda have begun to penetrate this region every dry season. The sheep are usually herded by single men, who have left their families further north, whither they will return in the wet season. Sheep are generally not milked, but the Uda'en herders drink the milk of their sheep, although they do not sell it.

Further south, around Abeokuta, there appear to be two historical layers of Fulbe: residents who have been settled since the 1960s, and a second wave following the drought of the 1980s. During the first wave, some Fulbe were brought to herd cattle owned by Yoruba businessmen, but others came as transhumant pastoralists. They no longer have large herds of cattle, and have now established permanent farms on which they grow subsistence crops. They take on herding contracts with local Yoruba cattle owners, working in exchange for milk and a share of the offspring. Fulbe are at present permanently settled around Odeda and Egbado. The second wave of Fulbe were not originally cultivators and they presently maintain large herds, selling stock and dairy products for subsistence. However, the gradual process of incorporation into the community is continuing along the same lines as in earlier periods. For example, 350 Fulbe families from Borgu moved into the Iwoye area to settle in late 1989. Land was allocated to them by the local community heads, relations with farmers are good and the Fulbe are beginning to build permanent houses.

Lagos

The Lagos area consists of a complex of lagoons, swamps and a sandy beach area dominated by coconut palms. Although the maintenance of cattle under coconut palms is an established practice in East Africa, the humidity of the Lagos region was thought to preclude this in West Africa. Despite the climate, there are two Fulbe camps on the coast, both near Badagry. They are occupied by related families originally from Mariga in Niger State who came to the region in the 1960s. They are integrated into the local community, growing maize, rice and coconuts and rearing livestock.

2.2.2 The centre

In Nigerian nomenclature, 'The East' tends to refer to the area between Asaba and Abakaliki, although geographically this is the centre of the country. In comparison to the open savannas in the south-west, this region is distinctly problematic for Fulbe pastoralists, both because they are extremely densely settled and because of religious conflicts with the indigenous peoples. As a consequence, the influx of Fulbe came relatively late, and has been considerably less homogeneous than in the Yoruba areas.

Although some Fulbe pastoralists made their way to the region north of Enugu in the 1960s, they left at the outbreak of the Civil War in 1967, and the present pastoral Fulbe began to arrive in the mid-1970s. The usual impetus for such movement is the need for water and pasture, but clashes with indigenous farmers elsewhere (particularly in Benue and Cross River) have accelerated this movement.

The main Fulbe groups are the Daneeji from Sokoto, who are the majority, the Pagaya'en from Katsina, the Sisilbe and Bargu'en from Sokoto, and the Rahaji and Sirifa'en from Bauchi. Leaders are generally chosen from the Pagaya'en or 'King's men' from Funtua near Katsina. The Daneeji, who arrived first, own mainly white Bunaji cattle. The Sisilbe, the next largest group, have white Sokoto Gudali cattle. There are a few red Rahaji cattle, and many herders are cross-breeding and experimenting with colours and types.

These Fulbe do not cultivate and most move only short distances between seasons. Along the banks of the Niger, cattle movement is from low-lying riverine areas to higher ground nearby. In the riverine areas, cattle can now be grazed for most of the year due to the damming of the flow further upstream. In the dry season, the herders stay in the swampy grasslands along the Niger and Anambra Rivers. Human population densities are lowest in this area, and the residues from rice-farming can be grazed by cattle after the harvest. They stay for approximately five months until the rains start and then move to the uplands in the north for the rest of the year. New Fulbe migrants, such as the refugees who came from Ogoja in April 1989, are often advised to move to the Anambra floodplains. Although still regarding Anambra as a base, some Fulbe migrate seasonally south to Okigwe or westwards across the Niger.

Owerri and Umuahia have had little Fulbe presence until recently and no permanent settlement of pastoralists. The first Fulbe came south to the derived savanna land around Okigwe from Anambra in 1983, attracted by the better grazing land and rice residues as well as by the tolerance of the local authorities and crop farmers. In the dry season of 1990, six ruga groups with about 2,000 animals were said to migrate annually. The greatest inducement to remain so far south is the better condition of their cattle and the improved calving rate. Three ruga groups were still there in the early 1990 rainy season, suggesting that the herders are beginning to explore the potential for all-year-round subsistence. The success of these ventures has stimulated experimental movement even further south. In the dry season of 1990, a herd was encountered grazing near Kaiama, not very far from the point where mangroves begin.

Apart from pastoralists, traders have also realised the potential of the vegetation in the humid zone. The demand for meat in the urban centres of the south is such that there are now recognised locations for 'fattening herds'. These are grassy patches within the forest zone where cattle are kept for various lengths of time to be fattened for the market. This practice has arisen because of the premium price of fat stock, rising transport costs and the economies of scale in herding close to markets.

2.2.3 The south-east

In the south-east, significant movements of pastoralists only began in the 1970s and 1980s. Northern Cross River is derived savannah, some parts of which are suitable for the herding of zebu cattle. In the colonial era, most animals destined to feed the towns were trekked to market, especially in regions without a railway. Information about the grazing in these regions came from Fulbe drovers who went to the towns to manage animals for the Hausa cattle-traders.

The Pagaya'en clan was the first to enter Cross River from Makurdi and Wukari in 1954. All the northerners fled at the outbreak of Civil War in 1967, but soon began to return; by the 1970s there were communities between Katsina Ala and Ogoja. Although this region is not densely settled, relations between the pastoralists and the indigenous peoples were never good and at the end of the 1980s there were several major conflicts that led to the Fulbe fleeing westwards to the Abakaliki region (RIM, 1989).

2.2.4 Fulbe in southern towns

There are northern Muslim communities in all the large southern towns, involved both in long-distance trade and the marketing of livestock and other northern products. The daily business of these communities is often based in the cattle markets, *Gariki*, and individuals usually live in the strangers' quarter, *Sabo*. The Hausa have been resident in Ibadan since the mid-nineteenth century (El-Masri, 1967). Cohen (1965) provides a valuable ethnographic study of this community whose members have always been very active in the livestock trade, both as dealers and as butchers.

3. Changes in ecological adaptations

3.1 Dairy production versus beef sales

Classically, the basis of Fulbe subsistence has been the exchange of milk or other dairy products against cereals. Although this is still occasionally practised in rural areas far from markets, today most producers sell their milk in the market or to dealers, and then buy staples and household necessities with the money, even in the semi-arid zone. Women are usually responsible for the processing and sale of milk or its by-products and the income they earn from this is at their disposal. Where milk is abundant, as in Borno, they can also control the amount of milk drawn off from the cattle, but elsewhere, this is usually controlled by men, whose interest is in calf survival.

Even in the north, this trade has been declining as the terms of trade for milk against cereals have gradually worsened. The reason seems to be the increasing prominence of other status products both for personal consumption and to be served to guests. In the nineteenth century, travellers such as Heinrich Barth were regularly sent calabashes of milk as gifts, a custom still retained on the Mambila Plateau. The expansion of soft drinks, and packaged food has largely replaced milk as a status food, although it is still bought and sold. Indeed, population densities around Kano have made fresh milk a very rare and expensive commodity and for the wealthy it has acquired a new prestige.

In the humid and subhumid regions, the prevalence of tuber production tends to exclude the exchange of cereals for milk. In addition, the market for fresh or soured milk is very reduced. This has usually been attributed to lactose intolerance, although sterilised tinned milk is an established commodity. Alternatively, it may be simple unfamiliarity, since the trypanotolerant dwarf shorthorns were not milked. As a result, dairy products can only be sold to small resident northern communities in the large towns, and milk off-take for human consumption is substantially less. The consequence has been that pastoralists, requiring alternative sources of income, have to sell the only other product of their herds -meat.

The sale of animals has traditionally been men's responsibility, even where individual animals may be owned by women. Herders in the central region are compelled to sell larger numbers of animals to meet their household expenses and usually cull calves and barren females. However, almost all the pastoralists reported improved productivity since the calves had access to a greater proportion of the available milk. Greater calf survival, earlier age at first calving and greater calving percentages were the benefits, suggesting that the greater offtake is counterbalanced by increased animal numbers.

3.2 Herd composition

The Fulbe are conventionally treated as cattle pastoralists and there is some truth in the stereotype, both in sheer numbers and in terms of cultural values. Nonetheless, typical herds in the northern regions include cattle, sheep, goats, donkeys for baggage and occasionally camels for rapid transport.

All these species are more or less susceptible to humidity-related diseases. Moving southwards, camels and horses are the first to be dropped from the herds, then goats, donkeys and finally sheep. The southernmost herds, especially those on the edge of the Delta and in the grass 'islands' in the forest consist purely of cattle.

Apart from species balance, the composition of the herd also develops. There are two factors responsible for these changes: the sale of more animals for beef, primarily barren females and calves; the tendency to leave milking females further north where they are less at risk from disease. The result is that herds have a substantially higher proportion of males than further north.

3.3 Evolution of Livestock Breeds

Apart from eliminating goats and reducing sheep numbers, southward expansion has also led to changes in the breeds managed. There is a strong correlation between 'red' zebu cattle breeds, such as the Rahaji, Azawak and Wadara, and the arid and semi-arid zones (RIM, 1992, II:Maps III-1.2.2 to 1.2.6). These breeds are generally considered more prestigious by the pastoralists, and the evidence is that they are both heavier and better milk producing animals. However, they are notably less resistant to both nutritional stress and humidity-related disease. As a consequence, the general trend has been to switch to 'white' breeds, especially the Bunaji and these have now become the dominant breed throughout the subhumid and humid zones. This is usually achieved either by simply buying males of the preferred breed and gradually crossbreeding the herd, or by exchanging animals with pastoralists whose grazing orbit is more northerly.

Muturu or West African Dwarf shorthorn cattle were once widespread throughout southern Nigeria but are almost everywhere in retreat (Blench et al, forthcoming, a). In the past, many villages kept muturu cattle for ceremonial purposes. In the 1960s it was common to see them in the villages and by the road side. However, as human populations increased the extensive grazing systems became disruptive to crop production and new by-laws in the 1970s requiring them to be tethered and fed by cut and carry method. The principal advantage of muturu, their trypanotolerance, has less and less merit, with the cutting down of the forest and the wide availability of trypanocides. As a consequence, all across the derived savanna, farmers are either ceasing muturu production or are exchanging their animals for Keteku (zebu x muturu crossbreeds) or zebu proper (Blench et al, forthcoming, b). This is linked to the employment of Fulbe graziers to look after the herds, replacing the children who used to manage the animals but now go to school.

3.4 Migration Patterns

Pastoralists are constantly exploring new terrain, initially on a seasonal basis. Although one of the clichés pastoralist research is maps striated with arrows of wet and dry season movements, the evidence is that movement is a great deal more complex than such diagrams can capture. In particular, pastoralists are driven not only by the nutritional needs of their herd but by the fear of epizootic disease. Movements in the densely settled forest areas have therefore been more tentative, exploring pockets of grazing between settlements.

Within Nigeria, one of the keys to the gradual insertion of pastoral nuclei in high-rainfall areas is the availability of drugs. To keep their stock alive in the humid areas, herders need access to trypanocides and remedies for skin diseases such as dermatophilosis. The economic situation in Nigeria has been such in recent years that both availability and price are highly uncertain. Pastoralists must therefore be ready to retreat at short notice back to less risky areas.

4. Interaction with local populations: co-operation and conflict

It would be romantic to imagine that relations between pastoralists and farmers have ever been uniformly good, in the past or present. However, the 1980s and 1990s have seen an acceleration in the frequency of violent incidents unprecedented in this century. These can be attributed to a number of basic causes;

- a) Movement of pastoralists into fresh terrain, where language, religion, culture and landholding patterns are unfamiliar
- b) Increased desperation of pastoralists competing for a dwindling 'stock' of grazing land.
- c) The taking of power in Local Governments by indigenous farming peoples who not promote pastoralists' interests
- d) The collapse of the system of *burti*, or cattle tracks
- e) Widespread availability of guns and other weapons combined with a general breakdown of law and order in the country as a whole

Fatal conflicts between farmers and pastoralists are reported almost daily in the newspapers, but no effective action has yet been taken by government to analyse or remedy the causes of these conflicts.

Blench (1984) discusses the patterns of conflict and co-operation in a limited region in Adamawa, and the contrasting relations between the Fulbe and their Samba and Mambila neighbours. Since the period dealt with in that paper, matters have continued to deteriorate for both communities and, in particular, the breakdown of law and order on the Mambila Plateau has led to the wholesale movement of Mambila communities into Cameroon.

Nonetheless, it *is* possible to integrate with the indigenous community and form a cohesive unit, as is evident from the situation in the south-west. The oldest stratum of migrants, the Borgu'en, have fully adapted to the local life-style and have become integrated into the local communities. Some groups of recent migrants are trying to build links with farmers before moving into the area, as in Iwoye.

Another model of co-operation is provided by the growth of caretaking arrangements. Cattle represent an attractive investment for farmers and civil servants, especially at a period of unstable exchange rates. Fulbe herders were usually employed to rear the animals either separately or along with their own. This co-operation is not only with the settled Fulbe, but also the incoming 'nomadic' Fulbe who are often more willing to remain 'in the bush'. For example, in Faşola, west of Oyo and in Sooro, south-east of Kisi, caretaking arrangements have developed where herders take a proportion of the offspring in exchange for rearing.

West of Lagos, the system of cattle production has been radically transformed since the 1960s by the arrival of Fulbe and Hausa cattle-owners, and the introduction of new breeds, the n'dama and zebu. Most of the cattle are now crossbreeds and are looked after by caretakers, rather than managed by their owners, who now prefer to concentrate on tree-crops. Fulbe without herds who have recently come to the area, and have herding skills, are willing to take on this work. A combination of larger size, the possibility of milking, and the availability of herders led to the adoption of n'dama in preference to pure muturu. A profitable cash crop, coconuts, and the economies of scale that flow from communal herding of small individual holdings (usually 1 to 6 animals) has stimulated the rise of caretaking.

This evidence suggests that communities can co-operate, even where population densities are relatively high. Some of the worst clashes, such as those in Cross River and Benue, have taken place where settlement density is lower. A basis for economic exchange remains an important factor, but such exchanges will usually develop where two communities have expressed the will to work together.

5. Conclusion

This paper has attempted to summarise the changed situation of Fulbe pastoralists in Nigeria in the decades leading up to 1990, and to explore some of the attendant ecological and social changes. Two significant conclusions can be drawn from the present data: the present situation is unstable – conflict with settled cultivators in the south is likely to push back pastoralists who do not settle and adopt mixed farming, and damage to the ecology is likely to increase still further making ever-lower sustainable levels of production.

The instability derives from the fact that human populations and thus pressure on arable land must continue to increase in the humid and subhumid zones. In the arid zone of Niger, the final refuge of pastoralists was to enter regions where arable farming was impractical (Swift 1984). This is not possible in Nigeria, since almost all the land area is cultivable, excepting the mangrove swamps. Pastoralists have been shifting southwards, pushed by the availability of drugs, the market for cattle and the existence of pockets of untilled land between settlements. As these are encroached, the Fulbe must either settle and adopt intensive production methods, or cease being pastoralists.

Assessing the degree of damage to the ecology and apportioning blame is always controversial and usually unsatisfactory. Concern about erosion in the humid zone in Nigeria has tended to focus on the impact of traditional farming methods rather than pastoralism. However, in the high-altitude grasslands and parts of the subhumid savannah, the impact of high densities of livestock production is becoming increasingly evident, exacerbated by the breakdown of control systems, such as were represented by the system of cattle tracks.

Unless Nigeria adopts population policies very different from those at present, there is little doubt that human population will increase and with it pressure on farmland. The expedient of migrating into the more humid areas may be a temporary palliative, but in the long term will only result in further conflict. The solution is for pastoralists either to adopt mixed farming strategies, thereby establishing a claim to arable land, or to be pushed beyond Nigeria's borders.

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