LIVESTOCK-PRODUCERS

OF

SOUTHERN GONGOLA STATE.

Final Report on Wet Season Groundwork in 1983

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SUMMARY.

1. Zebu cattle constitute the single most important livestock resource of the Toungo Block, although they were only introduced by the Fulani people two centuries ago. The majority of these cattle are owned by the Fulani, but substantial numbers are also raised by the Samba and Mambila people, in conjunction with arable farming. Sheep are usually herded with the cattle, but goats are kept by all the peoples of the Toungo Block around the compound. Dwarf West African shorthorn cattle were once popular in the southwest, but have almost disappeared in favour of pigs.

2. The majority of the cattle in the Toungo Block visible from the air in the wet season are kept by transhumant pastoralists, a mode of production practised by Fulani and Samba. This involves the retention of a core herd of lactating animals around a permanent residence throughout the year, and the migration of excess animals to permanent pasture during the dry season. the most favoured locations for transhumance are river flood-plains and high-altitude grasslands. Only in the Benue lowlands are there numbers of herds kept by nomads, who migrate freely and have no permanent homes.

3. There are three principal breeds of zebu cattle in the Toungo Block; the **Gudali** and **Bodeeji**, both 'white', and the **Daneeji**, which is 'red'. The 'white' breeds were consistently reported to be more trypanotolerant and to resist famine and drought conditions more readily. Wherever these factors are a major consideration in livestock management strategies, 'white' breeds predominate.

4. Herders asserted that the principal constraint on livestock production was disease and the accompanying uncertainty about the availability or value of modern veterinary medicine. Although rinderpest is the current problem, trypanosomiasis is of longer term importance. Sedentarized cattle-owners show a more ready acceptance of the potential benefits of veterinary medicine than nomads, but given the importance of preventing the spread of infections during epizootics, a development programme should concentrate equally on both groups.

5. Other constraints on livestock production regularly mentioned by herders were;

a) Land tenure and the difficulty of obtaining a Certificate of Occpancy.

b) Insufficient water.

c) Pasture degradation (Mambila Plateau only).

d) Insufficient credit facilities.

e) Farmer/grazier conflict.

f) Bush-fires.

g) Lack of salt or potash licks (Mambila Plateau only).

h) Access roads.

6. The overall problem in the Toungo block may be summarized as poor communications. They restrict the market for agricultural surplus, and the sales of livestock on the national market, and thus prevent livestock-owners from making use of economic opportunities that would be available in other parts of Nigeria.

PREFACE.

The study described in this report was carried out as part of a contract between the Nigerian Government's Livestock Project Unit (LPU) and Resource Inventory Managment Ltd. (RIM).

The contract calls for a seasonal inventories of the livestock production systems and potentials in a 44,000 km. square area of southern Gongola State, known as the Toungo Block. RIM's approach to these inventories involves low altitude aerial survey to assess the numbers and distribution of livestock and people; with ground sociological investigations of traditional production systems; and analysis of the projected economic viability of specific development inputs.

These three aspects of RIM's approach follow one another sequentially. Results of the wet season low altitude aerial survey have already been presented to LPU (**RIM**,1983a). This report presents the results of the ground-based sociological investigations.

In addition to specific reports requested by RIM's clients, **RIM** has a policy of producing Working Papers. These Working Papers, which are made available to the clients, allow results to be made accessible before scheduled reporting dates. Alternatively, they are used to report on additional information collected during the course of a study, that might be useful to staff concerned with the implementation of a developement project, but is not directly relevant to the brief from the contracting agency.

This report is preceded by two Working Papers (**RIM**,1983b,c) which deal with sociological and historical topics relevant to traditional livestock production systems in southern Gongola State. They are;

> Working Paper VIII 'Fulani Movement into the Southern Gongola Area from 1835 to the Present'
>
> Working Paper IX 'Conflict and Co-operation: Fulani Relations with the Mambila and Samba people of Southern Adamawa'

The team involved in the groundwork were;

Dr. R.M.Blench -Sociologist, Team Leader.
Dr. D.Bourn -Animal Ecologist
Mr. N.MacDonald -Animal Ecologist

RIM scientists were supported throughout their ground investigations by two staff, Mallam B. Tubra and Mr. S.Mohamed of the Federal Department of Pest Control Services.

1. INTRODUCTION.

The Nigerian Federal Livestock Department (FLD) has adopted a long-term strategy of relocating the national cattle-herd in more southerly latitudes (David-West,1981). It also pursues a policy of encouraging the settlement of pastoralists. The middle belt of Nigeria, the 'sub-humid zone' in recent terminology, has a higher rainfall, and a generally lower pressure on land resources than areas further north. The region is recognized as having a good potential for livestock production. However, the widespread presence of tsetse flies and the attendant risks of trypanosomiasis have been long regarded as a major constraint to increased livestock production.

The Federal Department of Pest Control Services (FDPCS) -formerly the Tsetse and Trypanosomiasis Division of FLD -has a history of conducting successful tsetse control operations, and since the 1950's tsetse have reportedly been eradicated from some 200,000 square kilometres of northeastern Nigeria (Putt. et al.,1980).

The Livestock Project Unit (LPU) of FLD has identified the southern half of Gongola State as having a high potential for cattle production. It is actively considering the prospects of promoting livestock development within the region, by working in conjunction with FDPCS to expand tsetse eradication southwards into the eastern catchments of the Benue river. This area is termed the Toungo (Tungu) block.

Resource Inventory and Management Ltd. (**RIM**) was contracted by LPU to conduct both aerial and ground surveys of livestock production systems and potentials in southern Gongola State. This report presents the completed assessment of findings from the wet season ground survey, conducted between August and October 1983. In view of the complexity of the region and the importance of seasonal changes in patterns of livestock movement section VI gives recommendations for dry season groundwork.

The groundwork had as its primary objectives;

-the collection of up-to-date factual material to assist in the interpretation of the aerial survey results.

-to describe existing modes of livestock production, and provide an assessment of its degree of integration with local arable production.

-to determine the major constraints on livestock production, as percieved both by producers and government officers.

-to identify options available for livestock development in the light of the expressed needs and experiences of livestock producers.

This report also includes a survey of the literature, ethnographic, historical and developmental, on Adamawa and Eastern Benue, and incorporates the new data collected into a general model of stock-rearing in the Toungo block. Knowledge of the social organization of the peoples of southern Gongola State, with an assessment of the conflicting interests of pastoralists and farmers will enable more accurate prediction of the effect of innovative livestock development strategies.

SECTION II

METHODS

2.1 Ground Survey.

The method of the ground survey was to research in detail those regions where aerial survey (RIM,1983a) had indicated the wet season cattle density was highest. Three major areas of cattle concentration were identified from the air; the Ganye area east of the Shebshi range; the Mambila Plateau; and a band running eastwards parallel to the line of the Benue river, joining the Donga river valley to the region of Mutum Biyu, along the line of the new road from Wukari to Jalingo. Ground investigation began directly the preliminary results from the wet season aerial survey were available at the end of August, 1983, and continued until October of that year.

2.2 Field Interviews and their Limitations.

The researchers first introduced themselves to to the relevant authorities within the study areas, explained the purpose of the study, and gained permission for further work. A series of group interviews were then conducted through the medium of Village Heads in market towns. Local government and private individuals were interviewed separately, in order to construct a rounded picture of the production system and its problems.

a) Interpretation. In the survey area, the principal languages spoken by cattle-rearers are Fulfulde, Hausa, Samba and Mambila. Fulfulde is used as a lingua franca throughout most of this part of Southeastern Gongola State, and was usually satisfactory in communicating with stock-rearers. Farmers and local government officials were more likely to be familiar with Hausa and English, and interviews were therefore conducted in these languages.

The interpreters were Mr. Mohamed Settima and Mr. Babuwa Tubra, who are officers of the Federal Department of Pest Control Services. Both are

fluent in Fulfulde, Hausa and English, and moreover, have previously worked and travelled widely in the study area. In view of this, no major problems were experienced with translation during the course of the study.

b) Recording the Interviews. Notes were made on paper at the time of the interviews. All public discussions were also recorded with a stereo tape-recorder, with microphones oriented so that both questions and audience responses were clearly audible. The recordings were later used to check points of detail where notes on the interview were unclear or incomplete. These tapes are lodged in the RIMArchive, and copies can be made available to LPU on request. A complete list of these recorded interviews is given in Appendix II.

c) Bias in Interview Samples. A major problem in collecting the interview material on stock-raising was the relative articulacy of certain sectors of society. Men were consistently more articulate than women, and within the context of male/female relations in Fulani culture, women are unlikely to make their case strongly to male interviewers. Women's views are nevertheless important, both because they are in charge of most aspects of dairying, and because some are substantial stock-owners in their own right. This bias should be corrected in future work if at all possible, both through the use of female interpreters, and by seeking out female informants.

Apart from sexual divisions, another major source of bias is ethnic divisions. Meetings held for stock-rearers in the Ganye region were usually attended by Fulani, and only occasionally by Samba men, unless we requested the Village Head to specifically send for individual Samba stock-rearers. Even when Samba attended meetings, they tended to remain at the back. It was partly possible to counteract this by holding individual interviews, but Samba opinion probably remains under-represented in our present data.

In the Mambila region the problem was somewhat different. Mutual antagonism between Fulani and Mambila stock-rearers was so great that it

was rarely possible to hold joint meetings. Participants usually consisted of one group or another and it was thus possible for the expression of intemperate opinions. A less balanced picture may have been obtained in consequence.

Another element of bias is introduced by the operation of the traditional status system. Samba, Mambila and settled Fulani publicly defer to their traditional rulers, and for an ordinary individual to disagree openly with someone more senior than himself is difficult, whatever his private opinion. This does not hold for the nomadic Fulani, whose leaders, the Ardos, are elected and may be deposed by popular vote. As an example of the significance of this type of bias, it was generally found that elder or richer stock-owners would tend to over-estimate the size of the average herd, giving a figure of 500, when it might be less than 100. Equally they might assume a facility with legal and official procedures not borne out in reality for the majority of herders. Individual interviews can act as a counterweight to this, although a stratified sampling of interviews was impractical within the time constraints of the present study.

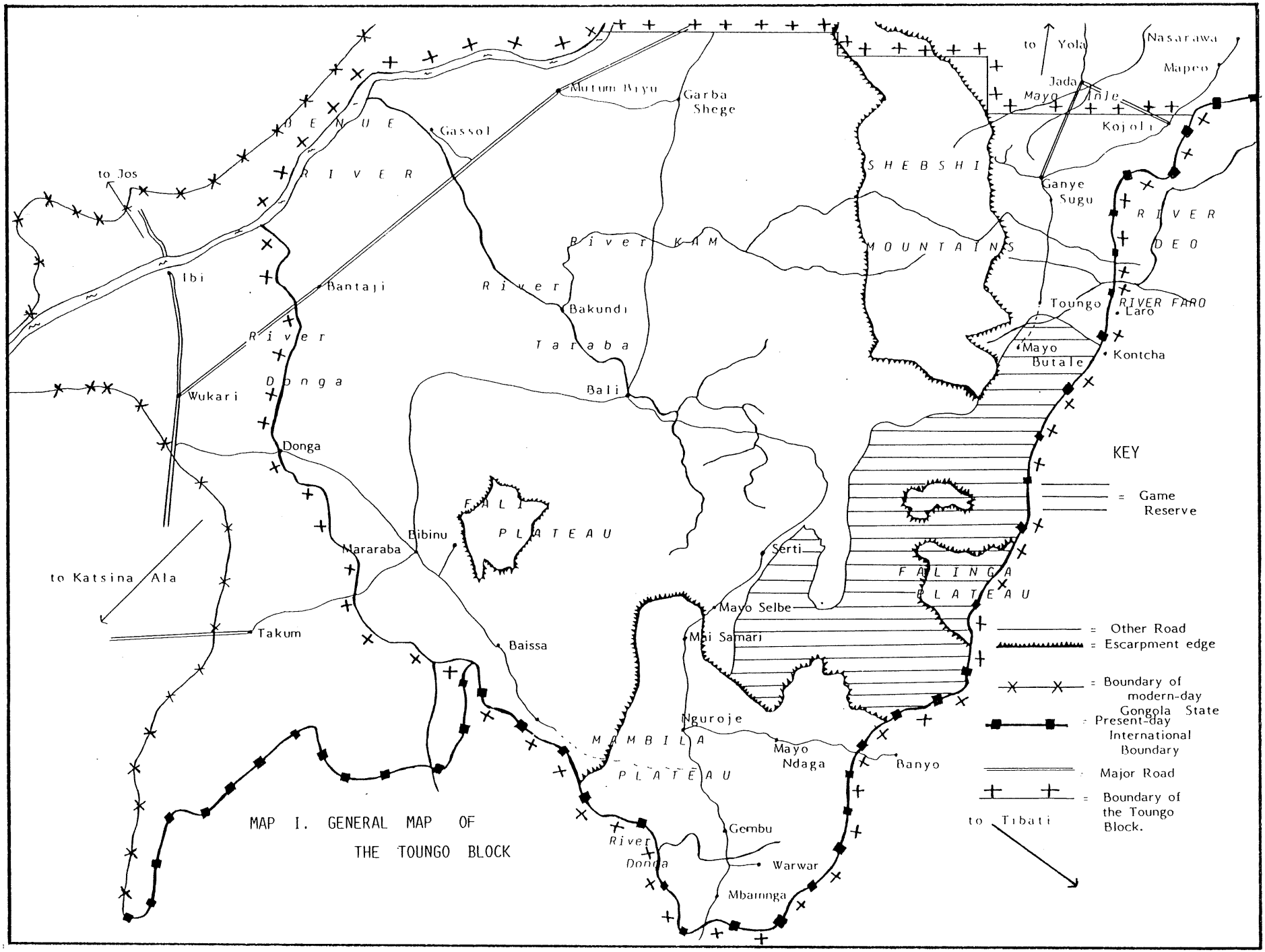
2.3. Literature Search.

The short interval between the availability of the aerial survey data and the beginning of the ground survey made possible only a brief prior search of the literature. This was, however, enough to establish that the Toungo Block has been neglected in terms of ethnographic, historical, economic and ecological studies, by comparison with other parts of Nigeria. Although a number of development reports (e.g. LIDECO,1972, SOTESA,1979, MAZDA,1980, GTZ,1980) have been prepared relating to parts of the study area, subsequent groundwork revealed that most of them were based on archival material of suspect reliability, or else were prepared from remote-sensing data, and were thus of only limited value for a more comprehensive description of livestock production systems.

After the completion of groundwork in October 1983, a further review of published sources on the area was possible, using the libraries of Cambridge University, Rhodes House, Oxford, and the School of Oriental and African Studies in London. There is a limited amount of ethnographic material in English, most of it deriving from work by Charles Meek, who was Government Anthropologist in Nigeria in the 1920's and 1930's. Works on the nomadic Fulani abound, but none refer to the situation in southern Gongola, where ecological and social conditions are sufficiently remote from the classic Sahel locations, as to make these works unreliable other than as bodies of comparative data. The most valuable and important sources are those in German and French, dealing with those parts of Adamawa immediately adjoining the study area. German forces invaded Adamawa from 1899 onwards, and they controlled both Mambila and the Ganye area until the First World War. Ethnographic material was prepared both by the military captains themselves, and by scholars who came afterwards. These sources have been little explored, but they provide important guides to the movement of nomadic Fulani into Adamawa, and the development of trade and commercial networks in the area.

French source materials are more complete and sophisticated than those in German. Both historians and geographers have dealt with Adamawa in some detail, and many of their findings have relevance for the general problems besetting the area today. For example, Hurault (1964 & 1969,1970) dealt with the problems of conflict between farmers and stock-rearers in Banyo, only ten miles from the Nigerian border. His descriptions of livestock production and demographic instability correspond closely to the findings of the **RIM** team. Hurault, moreover, considered various development options, and his valuable suggestions have never been fully explored.

The Nigerian National Archive, Kaduna, has a number of administrative documents relating to the former provinces of Eastern Nigeria. Manuscripts relevant to the Toungo Block are contained in the Section 'Yola Profiles' and these are listed in more detail in Part I of the Bibliography, 'Archive and Manuscript sources.'



MAP I. GENERAL MAP OF THE TOUNGO BLOCK

SECTION III

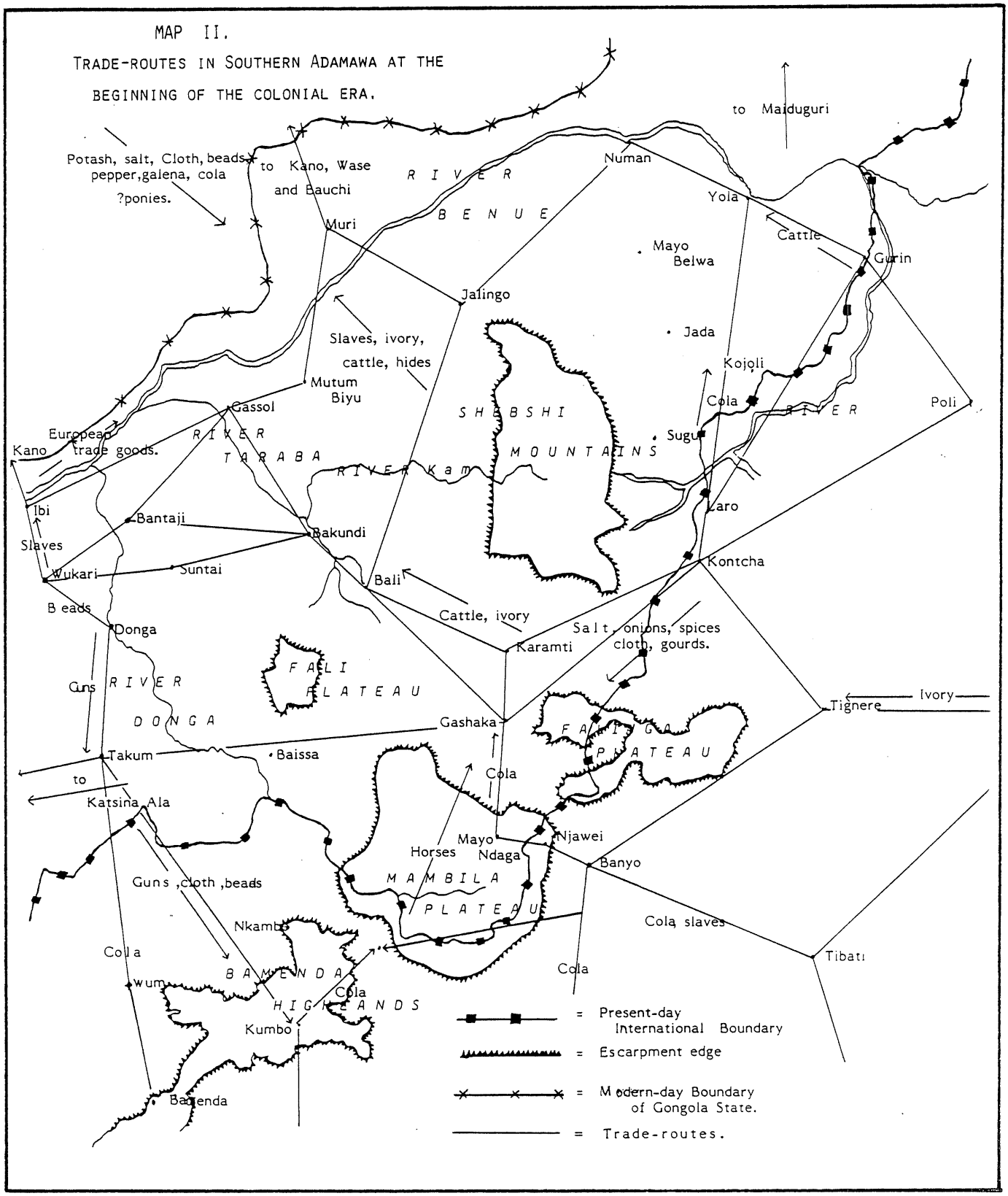
GEOGRAPHICAL AND HISTORICAL BACKGROUND.

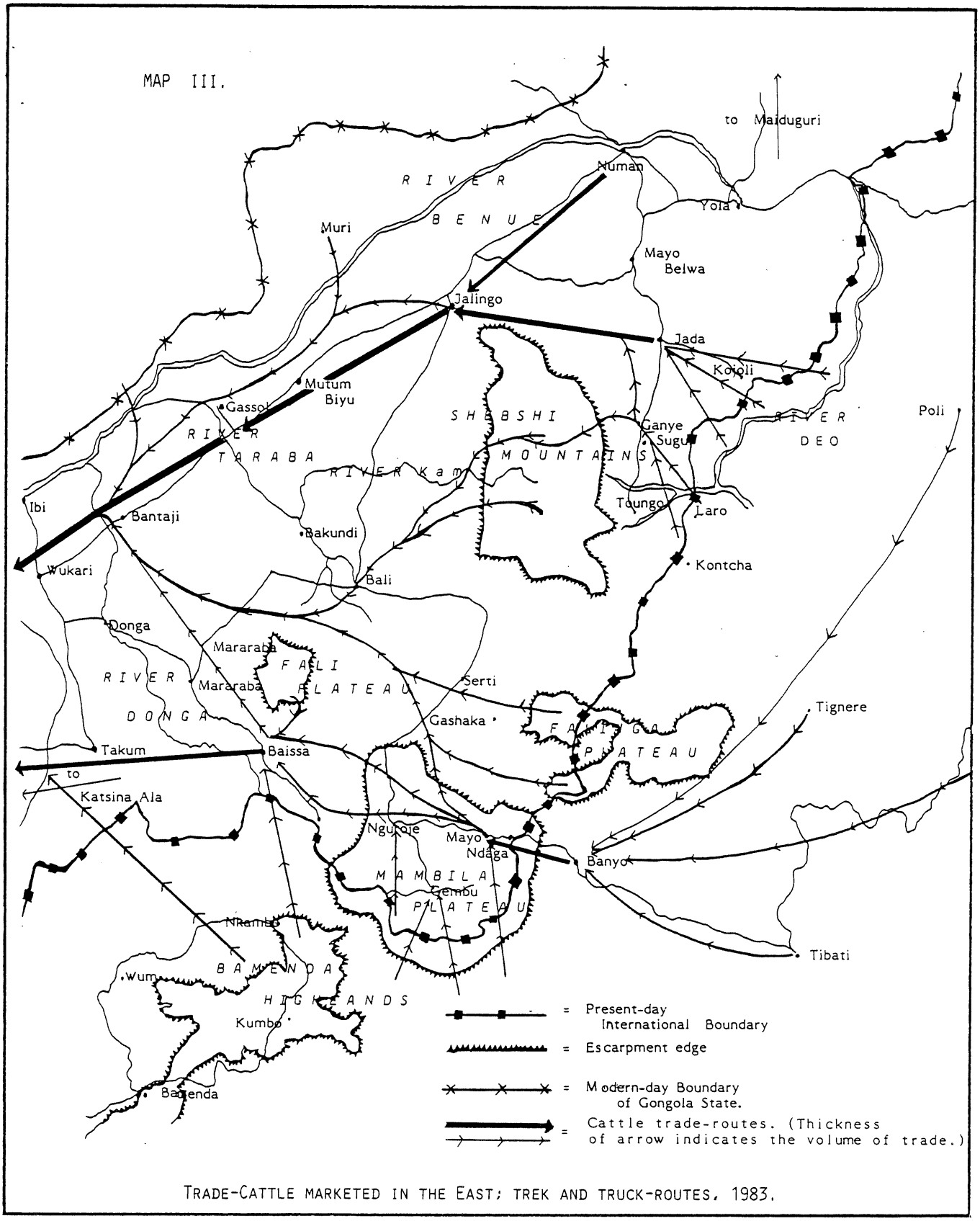
3.1 Geographical Summary.

The survey area, designated the Toungo Block (Map I), corresponds closely to the present-day southern Gongola state, except that some towns in the extreme west, such as Wukari, lie outside it. The northern limit of the Toungo Block passes below Jalingo, along a line joining Mutum Biyu with Jada. In the west it is defined by the Benue river, and in the east by the frontier of the Cameroun republic.

Although much of the Toungo Block has only a sparsely distributed human population (RIM,1983a:21), there is a a large number of ethnic groups with a spectrum of subsistence strategies. In view of the ethnic complexity of the area, and the wide variety of livestock management practices found among different peoples, section 3.4 synthesizes the information collected by RIM on their locations and livestock. This information is tabulated in Figure I. On the basis of this, certain groups are indicated as of particular importance in studying livestock production, and ethnographic information concerning them is summarized in subsequent paragraphs. Section IV expands on this with a more detailed discussion of their livestock management practices.

A general feature of the Toungo Block that has determined its sparse population and low rate of economic growth is the poor communications (Bawden and Tuley, 1966:21-2). They mention the adverse effect of the political changes consequent after the Plebiscite of 1961 on road construction schemes, and with the benefit of hindsight this appears to be true. The establishment of a national frontier with Cameroun, with regulated crossing points only to the south, at Ikom, and much further north at Mubi, has resulted in a decline of cross-border traffic, and this area is no longer on any significant economic axis. Map II, prepared from


MAP II.
TRADE-ROUTES IN SOUTHERN ADAMAWA AT THE BEGINNING OF THE COLONIAL ERA.
Potash, salt, Cloth, beads pepper, galena, cola ?ponies.
to Kano, Wase and Bauchi
RIVER BENUE
to Maiduguri
Numan
Yola
Cattle
Gurin
Mayo Belwa
Muri
Jalingo
Slaves, ivory, cattle, hides
Jada
Kojoli
Mutum Biyu
Gassol
SHEBSHI MOUNTAINS
Cola
RIVER
Poli
Sugu
European trade goods.
Kano
RIVER TARABA
RIVER Kam
Laro
Ibi
Bantaji
Bakundi
Slaves
Wukari
Suntai
Bali
Kontcha
Cattle, ivory
Beads
Donga
Karamti
Salt, onions, spices cloth, gourds.
Guns
RIVER DONGA
FALI PLATEAU
Ivory
Tignere
Gashaka
FAMFGA PLATEAU
Takum
Baissa
Cola
to Katsina Ala
Njawei
Mayo Ndaga
Horses
Banyo
Guns, cloth, beads
MAMBILA PLATEAU
Cola slaves
Nkambe
Cola
Tibati
BAMENDA HIGHLANDS
Cola
Kumbo
Bafenda
= Present-day International Boundary
= Escarpment edge
= Modern-day Boundary of Gongola State.
= Trade-routes.

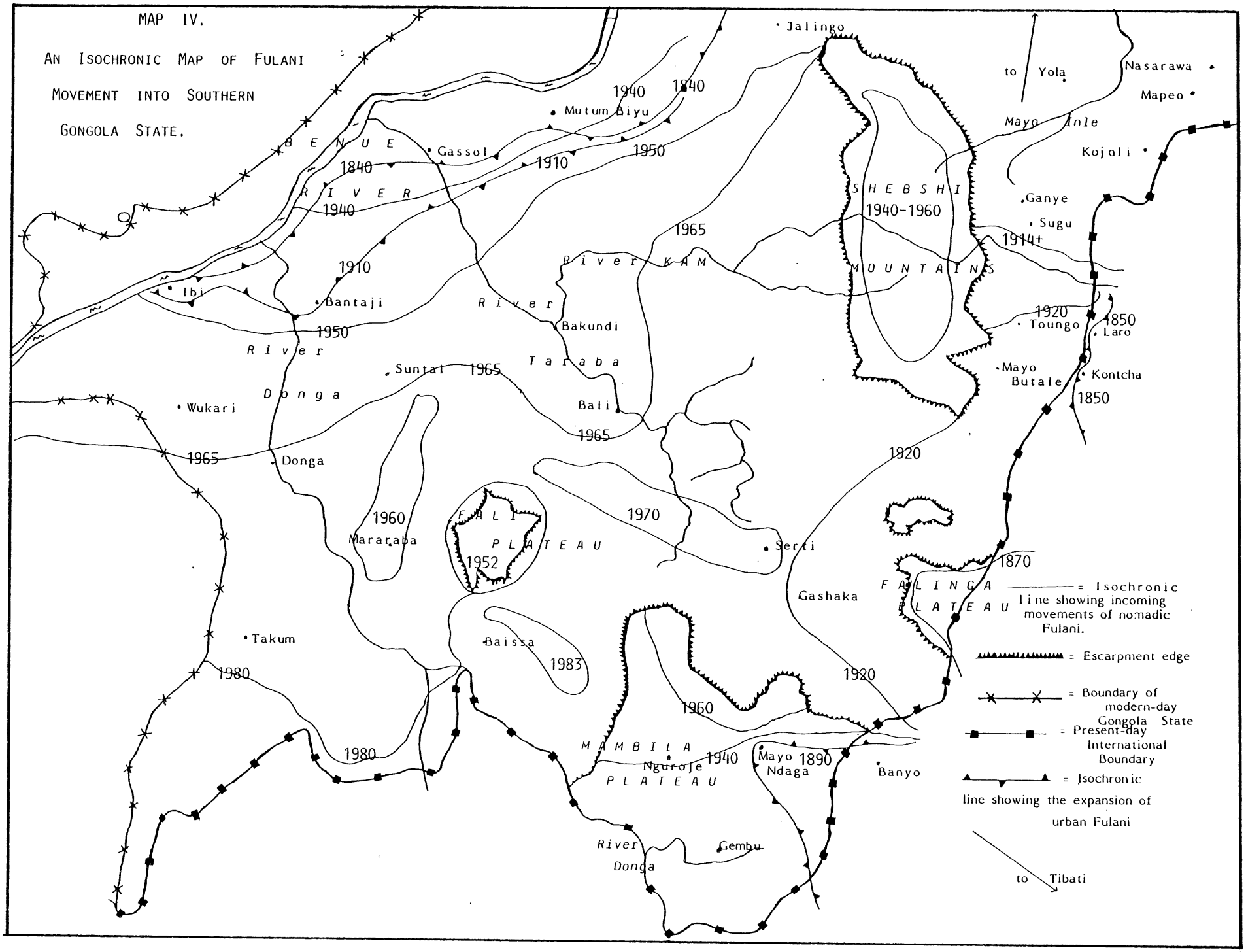


TRADE-CATTLE MARKETED IN THE EAST; TREK AND TRUCK-ROUTES, 1983.

the work of early geographers such as Nugent (1914) and Detzner (1913, 1923) shows the patterns of trade in southwestern Adamawa at the beginning of the colonial period. Map III, by contrast, indicates the routes used to export cattle from the Toungo Block in 1983, based on the statements of cattle-traders. It is evident that since the late precolonial period trade routes have altered dramatically. In the last century, traders crossed and recrossed southwestern Adamawa taking goods from the Benue to the Cameroun grasslands. Today, all routes lead from the interior out to the markets of the North and Igboland, taking primary farm produce such as livestock, yams and cereals, for immediate consumption by urban populations. This situation has been exacerbated by the construction of the Wukari-Jalingo road, a first-class tarmac road that allows for goods to move between Yola, Maiduguri and other northern towns, and the south directly. Towns in the Toungo Block have thus not had the opportunity to expand by capitalising on the entrepreneurial requirements of through traffic.

Many of the earth roads usable in the 1960's have recently deteriorated, and one response to this has been community road-mending, particularly by Tiv farmers, who have a vested interest in keeping the roads open to the trucks who take away their yams. The bridge between Mararaba and Takum has been down for three years, and the inaccessibility of the area east of Takum has already caused some of the more commercially oriented smallholders to leave. The escarpment road to the Mambila Plateau is barely passable at the height of the rains, and in consequence the cost of living is high and surplus agricultural produce is expensive to send to the national market.

Both Federal and State governments are clearly aware of this situation and road construction contracts are out both on the main escarpment road from Serti to Mai Samari, and on a new escarpment road via Abong from Baissa (see Map VII), on the Bali-Mayo Selbe road, and on the road between Jada and Mayo Belwa. The road that previously ran south of Toungo and joined the Serti road has been impassable for twenty years, but was recently surveyed for construction. When these roads are completed,


MAP IV.
AN ISOCHRONIC MAP OF FULANI MOVEMENT INTO SOUTHERN GONGOLA STATE.
Jalingo
to Yola
Nasarawa
Mapeo
Mayo Inle
Kojoli
Mutum Biyu
Gassol
BENUE RIVER
1840
1940
1840
1910
1950
1940
1965
SHEBSHI MOUNTAINS
1940-1960
Ganye
Sugu
1914+
River KAM
1910
Ibi
Bantaji
River Donga
1950
Bakundi
River Taraba
1920
Toungo
1850
Laro
Mayo Butale
Kontcha
1850
Suntai
1965
Wukari
Bali
1965
1965
Donga
1920
1960
Mararaba
FALI PLATEAU
1952
1970
Serti
1870
Gashaka
FALINGA PLATEAU
Takum
Baissa
1983
1980
1920
1960
MAMBILA PLATEAU
Nguroje
1940
Mayo Ndaga
1890
Banyo
1980
River Donga
Gembu
= Isochronic line showing incoming movements of nomadic Fulani.
= Escarpment edge
= Boundary of modern-day Gongola State
= Present-day International Boundary
= Isochronic line showing the expansion of urban Fulani
to Tibati

improved communications will make possible a variety of economic developments both via national and international agencies, and through normal internal trade mechanisms.

3.2 Historical Summary.

The populations of the Toungo Block are extremely diverse, both socially and linguistically. The migration and interaction of these people is probably responsible for their fragmentation, as much as the varied ecology and the diversity of production systems. Maps IV and V show the locations of the more than twenty ethnic groups in the Toungo Block.

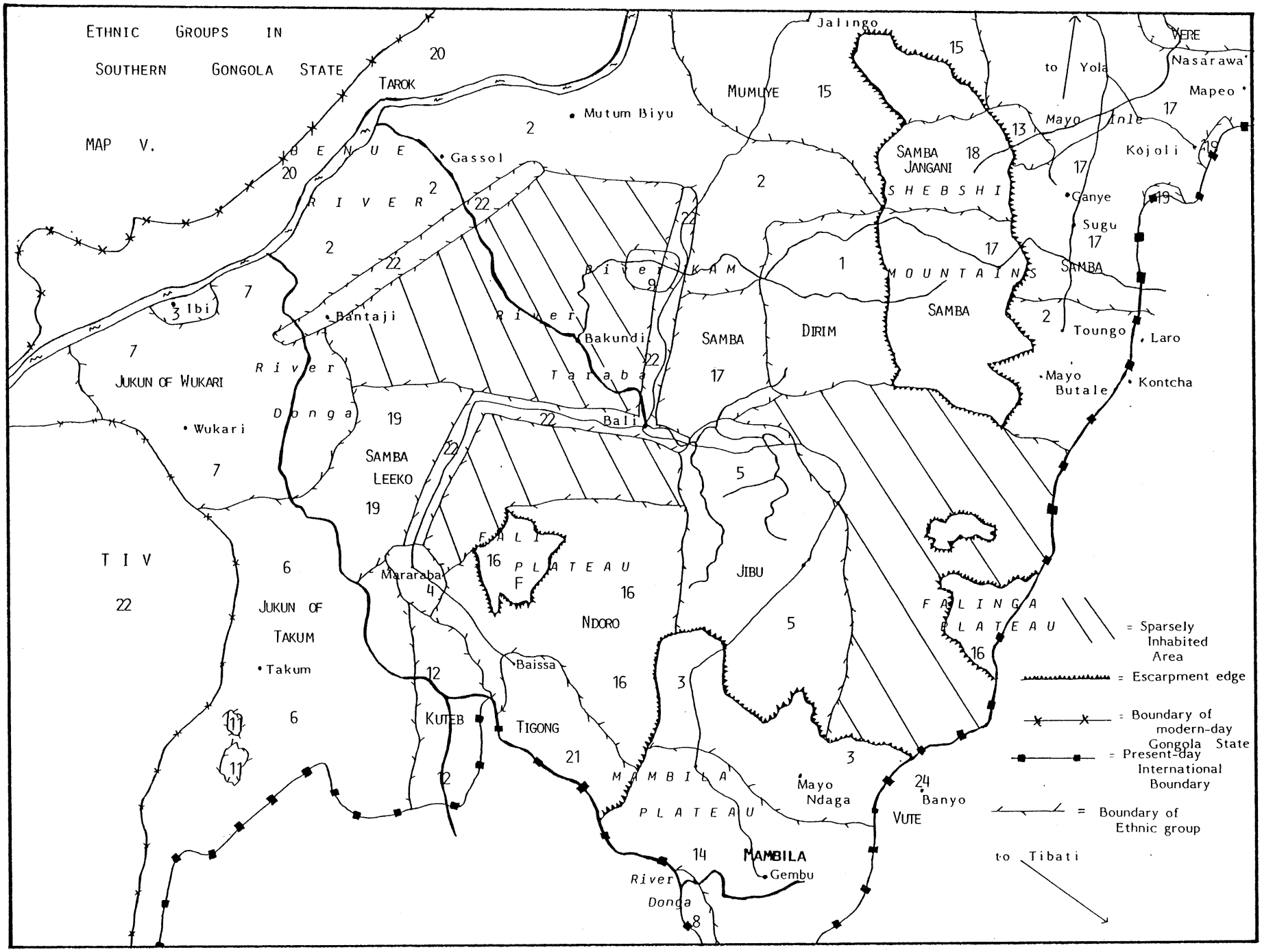
The original population seems to have been speakers of the Adamawa family of languages, such as Samba, Mumuye and Kam (Samarin,1971), who were arable farmers raising goats and chickens. After this, speakers of Bantu-related Plateau languages, such as Tarok and Jukun, entered the area from the northwest, pushing the Adamawa speakers north and east. More recently, speakers of Bantoid languages such as Tiv and Mambila, related to those of the Cameroun grasslands, have moved in as a result of expansionist agricultural populations. Finally, in the nineteenth century, new movements of Fulani out of north-central Nigeria brought both Islam and humped cattle, as well as the use of Fulfulde as a lingua franca. Isolated Muslim populations, such as the community of Hausa at Ibi, are also relics of this nineteenth century expansion.

The period of National Government also contributed to the movement of peoples -the establishment of the Gashaka and Gumti Game Reserves forced such peoples as the Kolbila and the Potopori to move into Cameroun.

A characteristic of all the peoples in this area prior to the incursions of the Fulani was acephalous political organization -that is, their societies were non-hierarchical, with no level of authority higher than a village chief. They are organised by a variety of principles, the most important being the clan system. Clans are formed of individuals who are related through either their mothers or fathers, and their membership

Key to Map V. (Page 25)

1. Dirim
2. Fulani
3. Hausa
4. Icen
5. Jibu
6. Jukun of Takum
7. Jukun of Wukari, also known as Wapan
8. Kaka
9. Kam
10. Koma
11. Kpan
12. Kuteb
13. Lamja
14. Mambila
15. Mumuye
16. Ndoro
17. Samba Nnakenyare
18. Samba Jangani, also known as Silang
19. Samba Leeko
20. Tarok
21. Tigong
22. Tiv
23. Vere
24. Vute


ETHNIC GROUPS IN SOUTHERN GONGOLA STATE
MAP V.
TAROK
BENUE RIVER
Mutum Biyu
Gassol
Jalingo
MUMUYE
to Yola
WERE
Nasarawa
Mapeo
Mayo Inle
Kojoli
SAMBA JANGANI
SHEBSHI MOUNTAINS
Ganye
Sugu
SAMBA
Ibi
Bantaji
River Taraba
Bakundi
River Donga
JUKUN OF WUKARI
Wukari
SAMBA LEEKO
SAMBA DIRIM
Toungo
Laro
Mayo Butale
Kontcha
Bali
TIV
JUKUN OF TAKUM
Takum
Mararaba
FALI PLATEAU F
NDORO
JIBU
FALINGA PLATEAU
Baissa
KUTEB
TIGONG
MAMBILA PLATEAU
Mayo Ndaga
Banyo
VUTE
MAMBILA
Gembu
River Donga
to Tibati
= Sparsely Inhabited Area
= Escarpment edge
= Boundary of modern-day Gongola State
= Present-day International Boundary
= Boundary of Ethnic group

of a clan determines who they can marry, and often the method of forming compounds and the recruitment of agricultural labour. A partial exception to this situation is the Jukun empire of Koroafa, but since this was already in decline by the time records begin, little is known about its structure.

As a result, when attacked from outside by a well-organized military force, there were no coherent mechanisms to mobilize for the defence of these scattered communities. The Fulani were thus able to establish settlements such as Gassol, Bantaji and Mayo Ndaga and to take tribute from Wukari with relative ease. A characteristic of the political history of the eastern Benue lowlands in the nineteenth century is the marching of armies back and forth, capturing towns and raiding. Peoples such as the Jibu were forced to move their location several times, while those with access to the high-altitude grasslands, such as the Samba, moved into them.

The colonial policy of indirect rule, by supporting established Islamic rulers, tended to weaken the power of non-Muslim chiefs, and subvert traditional authority structures, furthering the process of fragmentation that had characterised the nineteenth century. The freedom from external pressures in the post-Independence period resulted in a gradual awakening of a more coherent ethnic consciousness. Many peoples have gained a sharpened sense of unity and in consequence have been active in support of their rights and in gaining infrastructure for their home area in a manner impossible under colonial rule. The Samba, the Icen, the Kuteb and others, have formed Development Associations, and these act as a focus for cultural aspirations, as well as an impetus to improvements in the local infrastructure. The recent increase in the number of Local governments reflects the pressure for small groups to have direct access to the economic resources of the state.

3.3 Ethnic Summary.

3.3.1 Ethnic Groups and their Livestock: a General Survey.

Figure I summarizes the information available concerning the ethnic groups of southern Gongola State, their livestock and means of subsistence. Map V locates these people as far as the data allows, although many peoples, particularly the Tiv and Fulani, live dispersed among other groups, and so cannot be easily geographically distinguished. Figure I indicates;

a) Reference name. This is the name the group is known by in the most authoritative texts, particularly Hansford et al. (1976).

b) Alternative names. These are the names used to refer to the group in secondary sources.

c) Location. This is the approximate location of the group, mentioning principal towns where appropriate.

d) Subsistence. This gives the major means of subsistence of the group.

e) Livestock. Five columns list the main species of domestic livestock.

f) Secondary Literature. This gives references to more detailed ethnographic literature, where this exists.

3.3.2 The Specialised Livestock-Producers.

Certain peoples are of particular interest to a livestock agency, because they are already specialised in livestock production to a certain degree, and the majority of the cattle are owned by them. This section summarizes the available literature on these peoples and their social organization.

a) The Fulani.

The Fulani are the most well-known and widespread group of cattle pastoralists in West Africa. Their original home was in the extreme west in Senegambia, but their dispersal began more than a thousand years ago (Stenning,1959:20 ff.). Their constant need to exploit new pastures to meet the needs of their expanding herds has created a continuing drift eastwards, and the evolution of diverse livestock management techniques to exploit a variety of ecological conditions.

The original means of subsistence of the Fulani seems to have been nomadism, with the herders ready to move anywhere to obtain favourable conditions for their animals. The literature provides a number of descriptions of the social system of the nomads, for example Dupire (1962, 1970), Stenning (1959) Pfeffer (1936) and Maliki (1981). From works like these, the stereotype that most Fulani are nomadic is easily obtained. However, in the Toungo Block, the majority of the Fulani are transhumant pastoralists, who have a permanent residence where they leave a core herd of lactating animals, and migrate for some months every year to dry-season pastures. Moreover, in Nigeria, there are also Fulani who have become urbanised to such an extent that they have left off pastoralism and become traders or taken up crafts. These distinctions are characterised by the Fulfulde terms **FulBe na'i, FulBe wuro,** and **FulBe siire,** referring respectively to 'cow', 'compound' and 'town', in other words nomadic, sedentarized and urban Fulani.

The Fulani are divided into endogamous clans known as **lenyol,** subdivided into **suudu,** or maximal lineages. Among the nomadic Fulani, marriage outside the tribe is almost unknown, whereas the sedentarized Fulani men frequently marry wives from neighbouring agricultural peoples. Authority among the nomads is vested in an ArDo, usually a respected and wealthy member of the community. The ArDo is expected to act as spokesman for the community to outsiders, and can be deposed if he is seen as not fulfilling his task. Among the sedentarized and urban Fulani, authority systems were more various, as they tended to take on the colour of the peoples among whom they were living. In Adamawa, the usual figure was the Lamido, a post corresponding to the Emir in the states of Northern Nigeria.

b) The Mambila.

The Mambila people live in the southern and central regions of the Mambila Plateau and in some areas of adjacent Cameroun. Historical traditions record that they moved onto the Plateau after a dispute with the Vute of Banyo, perhaps in the eighteenth century. The isolation of communities from one another has produced a wide variety of dialects of the Mambila language.

The Mambila are farmers, specialised in the cultivation of the river valleys, and the high rainfall of the Plateau and the fertility of the soil allows them to crop for a number of years in the same place. Their farming techniques have been studied in detail by Rehfisch (1974:19ff.) and LIDECO (1972). Maize has recently replaced guinea-corn as the cereal staple, while rizga (Solenostemon rotundifolius) and cocoyam are the principal tubers.

Mambila social structure has been described by Rehfisch (1960,1962,1969,1974), Schneider (1955) and LIDECO (1972). The society is dispersed, without powerful chiefs and authority is vested in the clan elders. Economic specialization is limited, although men traditionally wove cloth and worked iron while women made pots. Inheritance is controlled by a double descent system, in other words, property passes from

fathers to sons and from mothers to daughters.

The Mambila traditionally only raised dwarf goats and chickens, but in the last twenty-five years they have begun to buy, or receive as wages from the Fulani, cattle and sheep. This is partly also reflects their integration into the cash economy, since in the 1950's they are reported to have had a negative attitude to imported goods (Rehfisch,1969). The difficulty of exporting surplus cereal production from the Plateau has meant that cattle and sheep are an obvious means of investing profits and surplus labour.

c) The Samba of the Ganye Region.

The Samba people are divided into a number of subgroups, often confused in the literature. The most important division is between the Samba Leeko, the Samba Jangani and the Samba of Ganye, as these three peoples speak mutually incomprehensible languages. The Samba have been studied by Frobenius (1913), Logan (1926), Meek (1931,I:328-412) and Fardon (1980,1983) but all these references concentrate on religious and historical aspects of Samba life without presenting economic data.

The Samba of Ganye moved to their present location at the end of the nineteenth century (**RIM**,1983b) from the Shebshi grasslands. Although they are arable farmers, growing cereal and root crops, they came into contact with Fulani herdsmen soon after the First World War (**RIM**,1983c), and shortly after that began to herd zebu cattle, which they either earned as wages while working as herdsmen or bought in the open market.

The Samba live in villages controlled by a number of chiefdoms (Fardon,1983), and they are divided into a large number of clans. These clans form the basis for marriage arrangements, but within village groups, the chief and the societies, composed of the elder men and women, are responsible for dispute settlement and the maintenance of order as well as for the mobilization of agricultural labour. Men and women farm for themselves and each keep the profits from trading or sales of surplus

produce. Both Samba men and women own cattle although women hire herders.

SECTION IV

LIVESTOCK PRODUCTION SYSTEMS.

This section describes the traditional livestock production systems,particularly of cattle, in use in the Toungo Block. Using the same regional divisions as Section III, it describes systematically regional variations in husbandry techniques, cattle breeds, land tenure and the livestock trade. Certain topics, such as epizootics and drought, directly relevant to the quantity of meat and dairy products available to the national market, are reserved for Section V, 'Development Aspects.'

4.1 Modes of Production.

4.1.1 Nomadism.

For the purposes of this report, 'nomadism' is the form of livestock production practised by people who do not farm, who have no regular permanent homes, and whose migrations follow the availability of pasture and the incidence of disease. This form of production is restricted to Fulani, and although part of a classic image, accounts for only a small percentage of the wet season stocking in the survey area. Only around Mararaba, and east of the new Wukari-Jalingo road were substantial numbers of nomads encountered. Although some were present in the Ganye area at the time of our visit, this was reported to be a consequence of the rinderpest, rather than a usual pattern.

It is difficult to estimate the exact percentage of stock in the hands of the nomads, but all our informants agreed that they had the largest herds and that they were under-represented at public meetings because they kept to the 'far, far bush'. A lingering suspicion that cattle tax may be re-introduced makes them wary of revealing the true extent of their herds to outsiders, and their strategies with respect to disease are quite different from sedentary groups. For example, among the transhumant Fulani

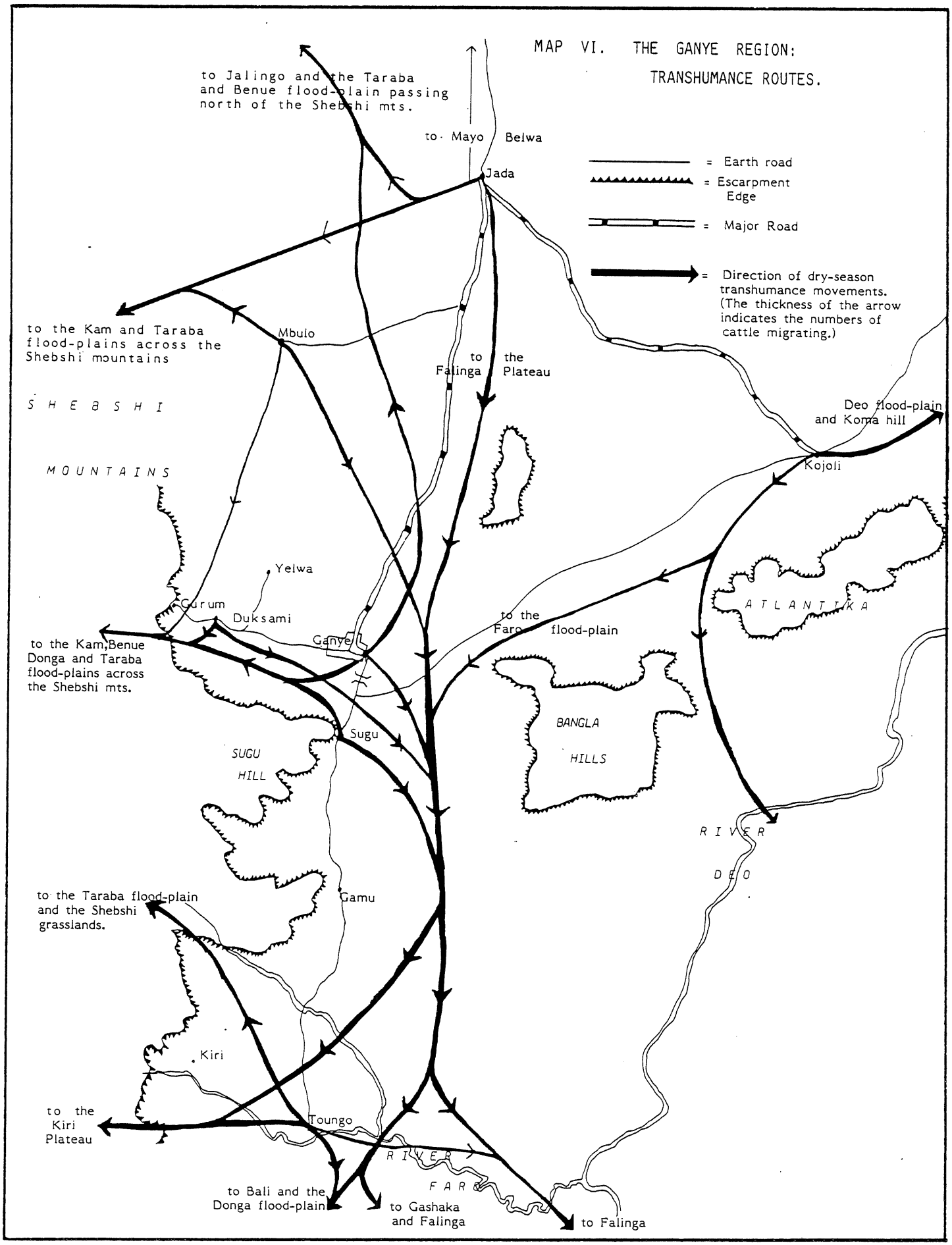
of Ganye and Mambila, we met few who did not believe in principle that the rinderpest vaccination should work, whatever doubts they may have had about it in practice. In Mararaba, however, the nomads interviewed had not had their herds vaccinated, and in fact expressed their intention to avoid vaccination. Their strategy was instead to conceal their herds in remote areas and risk the depredations of tsetse.

Nomads move together as a kin group, and both Dupire (1962) and Stenning (1959) have provided descriptions of the composition of nomad camps. The size of their herds makes it difficult for large groups to come together for any length of time, and so markets provide the natural outlet both for social exchange and for the transmission of news. The nomads were well-informed about conditions both in other part of Nigeria and other West African countries, and it is clear that this information network allows them to migrate to favourable areas.

Nomadism is often viewed as an archaic strategy, and sedentarization is considered to be the inevitable long-term fate of this type of livestock production. Nomadism continues to be a viable strategy because of the flexibility it allows the stock-owner, in the face of harsh and adverse environmental conditons, particularly drought and disease. Studies in Mauretania after the Sahel drought of the mid-1970's revealed that the nomadic herders were far more successful in preserving their herd than settled farmers (Gallais,1977:79 ff.). For this reason, nomadism is likely to persist.

4.1.2 Transhumance.

'Transhumance' is defined here as a livestock production system involving the division of a livestock herd into a 'core' of animals, mostly lactating females, resident at a permanent homestead throughout the year, and a movable herd, taken to pasture elsewhere for some months, when fodder is scarce. The pattern of transhumance, where stock-rearers participate in long-term seasonal migrations to dry-season pastures, is dominant throughout most of southern Adamawa, and only in the Benue lowlands were


MAP VI. THE GANYE REGION:
TRANSHUMANCE ROUTES.
to Jalingo and the Taraba and Benue flood-plain passing north of the Shebshi mts.
to Mayo Belwa
Jada
= Earth road
= Escarpment Edge
= Major Road
= Direction of dry-season transhumance movements. (The thickness of the arrow indicates the numbers of cattle migrating.)
to the Kam and Taraba flood-plains across the Shebshi mountains
Mbulo
to the Falinga Plateau
Deo flood-plain and Koma hill
SHEBSHI MOUNTAINS
Kojoli
Yelwa
Gurum
Duksami
Ganye
ATLANTIKA
to the Faro flood-plain
to the Kam, Benue Donga and Taraba flood-plains across the Shebshi mts.
Sugu
SUGU HILL
BANGLA HILLS
RIVER DEO
to the Taraba flood-plain and the Shebshi grasslands.
Gamu
Kiri
to the Kiri Plateau
Toungo
RIVER FARO
to Bali and the Donga flood-plain
to Gashaka and Falinga
to Falinga

substantial numbers of nomads encountered. A principal determinant of this type of production is herd size, [1] -the larger the herd, the more difficult it is to find sufficient pasture in the dry season. In the Ganye area, informants stated that a herder with less than fifty cattle would be unlikely to consider going on transhumance. However, excess animals might be sent with a herder whose herd size made transhumance imperative. A significant difference emerged between Samba and Fulani strategies in this respect, since some Samba farmers produce dry season fodder [2] for their stock to avoid the need to go on transhumance. This is, however, only possible if their herd is still small enough to provide with fodder from the collective effort of their kin group. However, Fulani in the Ganye area rejected the idea of either growing dry-season fodder, because of its association with low-status agricultural labour, or buying, because of the cost.

Choice of a dry season grazing area is determined mostly by considerations of ecology, land rights and disease. Because they are not commited to a 'home' area, the nomads are more flexible and adventurous in exploring possible new pasture zones. Transhumant Fulani like to establish routes and semi-permanent dry-season grazing areas that can be used year after year. Occasionally, however, exterior events force changes upon them. For example, the creation of the Gashaka and Gumpti Game Reserves has changed the patterns of dry-season transhumance in the Ganye area. Map VI shows the traditional routes to the south, which have been abrogated in recent years, and replaced by routes across and north around the Shebshi mountains Similarly, migration to the banks of the Faro and Deo rivers in Cameroun, was more common in the past, but a conjunction of the creation of the Faro Game Reserve, and conditions along the border have constricted this possibility. It is often assumed that dry season transhumance takes

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[1] For the purposes of this report 'herd' is defined as the total number of cattle owned by an individual or nucleated kin group. 'Herding group' or 'grazing unit' is used to cover the actual groups of cattle herded by individuals, visible during aerial survey.

[2] This consists of dried grasses and crop residues.

place over long distances; but in many places in the Toungo Block, herders do not travel more than 50-100 kilometres from their permanent home.

Fulani pressure on the eastern Benue lowlands in the last two decades has led to increased competition between in-migrating transhumant herders. Transhumant Fulani and Samba from Ganye now encounter nomads from Bornu and the Jos area, as well as other transhumant Fulani who have crossed the Benue from Wase and nearby areas. There are, moreover, an increasing number of Fulani resident along the line of the Wukari-Jalingo road and around Wukari and Takum. The isochronic map of Fulani movement, Map IV, shows that the settlement of the Ganye area occurred considerably before substantial Fulani migration into the eastern Benue. Traditional transhumance routes of the Ganye Fulani have thus been altered by the presence of resident Fulani in the Benue lowlands.

Disease also affects migration patterns, although its effect on nomads is more clearly seen. For example, of the Fulani interviewed in Bibinu and Mararaba, all were nomads who had moved into these areas as an experiment, in the light of the rinderpest. Transhumant graziers might have moved into these areas in an attempt to escape the effects of the epizootic. In practice, however, none did so this year.

The more gradual changes in tsetse infestation also affect these routes. Informants in the Toungo area almost unanimously asserted that tsetse infestation had increased substantially in the last two decades. [3] The Kiri Plateau, cited by herders as an ideal location for stock-raising, was reported to have a substantially reduced cattle population as a result of increased tsetse. The alleged high degree of tsetse infestation on the traditional trek routes southeast of Shebshi to the Donga have contributed to its disuse in recent years.

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[3] This is the region south of the zone regularly sprayed by the FDPCS.

Most transhumant Fulani interviewed regarded the seasonal movements as a necessity but were without exception in favour of any improvements that would lead them to becoming obsolete or less arduous, for example, dams or the clearance of tsetse infested areas. A common solution to this dislike of transhumance is to hire others to do the actual work of herding, whether Samba or Fulani. It seems that the Samba originally built up their herds in this manner, although many Samba farmers now buy their cattle at the local markets.

4.1.3 Mixed Farming.

Figure I indicates that all ethnic groups in the Toungo Block raise some types of livestock, and could thus be said to practice mixed farming. In the majority of cases, livestock do not form part of an integrated subsistence strategy. Only the Fulani, Samba and Mambila combine cattle-raising with arable farming to form a cohesive productive unit.

Throughout the survey area, households with under fifty cattle did not usually send their herds on transhumance but maintained them around the compound. The younger boys are sent out in the daytime with the animals to a river plain a few kilometres away during the dry season. The Samba, who have a greater commitment to agriculture, usually favour this more flexible strategy. The Mambila rarely if ever go on transhumance, grazing their cattle along the gulleys around which their farming system is based.

Neither oxen nor other draught animals play a significant role in the economy of the area. This is surprising, in view of the importance of oxen in the household economy of sedentarized Fulani elsewhere in Nigeria, for example in the Azare area north of Bauchi. Arable farmers are aware of the uses of ploughs, since most of those interviewed had seen them elsewhere. There are two possible explanations for this; the prevalence of root crops in the cultigen repertoire has meant a lesser incentive to make the necessary capital investment; and that the important role played by women in agricultural labour divides surplus capital between the sexes and thereby militates against its investment in agricultural technology.

Farmers in the Ganye region are aware of the value of cattle manure for the fertilization of their land. Maize responds well to fertilizer applications, and the primary importance of maize as a staple in the Ganye area has led to the evolution of co-operative relations beneficial to graziers and farmers. In other areas, Fulani regard maize residues as the lowest preference graze for animals (Waters-Beyer, 1983), but in the Ganye region they are apparently acceptable. Exchange relations of the type that have been characterized in many parts of Nigeria, where a farmer will allow the cattle on his fields in return for the manure, also exist around Ganye, although of course many farmers are also stock-owners.

The Ganye region exemplifies 'mixed farming' in its most productive form -the integration of livestock and arable cultivation within a unified production system. Elsewhere in the Toungo Block, however, the situation is very different. On the Mambila Plateau, relations between graziers and cultivators are poor. There are historical reasons for this, in view of the initial incursions of the Fulani on the Plateau as raiders, but the persistent friction between the Fulani and the Mambila agriculturalists can be attributed to the clash between their modes of subsistence.

Although some Mambila do own cattle, the cattle are not integrated in any way with other aspects of production. The dairy produce is not marketed, and the manure is not conserved to fertilize the fields. The indifference to draught oxen must be attributed to the hilly nature of the country, for most of the larger farms are situated along steep river valleys. Moreover, the Mambila claim that the cattle trampling the earth makes the germination of cereals more difficult. The introduction of mixed farming on the Mambila Plateau will thus have to meet criteria different from most other areas of Nigeria.

4.2 The Ganye Region.

4.2.1 The Stock-Rearers.

In the Ganye region, cattle are raised by both the Samba and the Fulani, who constitute the majority of the population of the lowlands. The Lamja, who form a number of small communities west of Tola, only raise goats. In the adjoining Shebshi grasslands the traditional inhabitants, the Samba Jangani, do not raise cattle despite the suitability of the terrain. However, to the northeast of the Toungo Block proper, the Koma people, who live on the Koma Plateau, raise the small 'muturu', dwarf West African shorthorn.

Cattle-rearing is not a longstanding practice among the Samba, who only became acquainted with zebu cattle when Fulani herdsmen began pasturing in their territory after 1914. Samba began to acquire cattle either through working for Fulani or buying them in the market soon after the First World War. As a result, cattle do not have the same prestige among Samba as they do among Fulani; and this is the origin of their different attitudes to dairying and to transhumance (Section 4.2.3).

The Fulani now resident in the Ganye district came there originally as nomads from a variety of locales further north, particularly Camerounian Adamawa, Bornu and the region between Kano and the Jos Plateau. Their migrations are described in more detail in Working Paper VIII (RIM,1983b). Although its high rainfall has made the Ganye district susceptible to tsetse infestation, the free availability of water and pasture seems to have made the region sufficiently attractive for the former nomads to settle. Most Samba villages are 'twinned' with Fulani villages -that is, the permanent homes of Fulani who have come into the area during this century.

The readily available pasture also attracts a large number of nomads every dry season. Given the prevalence of transhumance as a livestock production strategy among the settled Fulani in the area, it is something

of a paradox that when the local Fulani have moved out in the dry season, their place is taken by nomads from further north. The explanation may be that transhumant Fulani like to migrate between a succession of well defined grazing sites, and then set up a seasonal base at their wet-season pasture. Nomads, on the other hand, are prepared to keep on the move the whole time, ready to move into new and unfamiliar areas, if they hear that pasture and water are available. They can thus exploit an ecology that a more conservative sedentarized Fulani would regard as marginal.

4.2.2 Breeds of cattle.

In this area, there are three recognised cattle breeds; the **Daneeji** (white), the **Bodeeji** (red), [4] and the **Gudali** (a white shorthorn). **Gudali** are normally only seen in the hands of nomads, and few people had any opinion about their qualities as a breed. However, most of the transhumant Fulani in the area were familiar with the **Bodeeji**, but claimed to have systematically switched their herd from **Bodeeji** to **Daneeji** in the last thirty years. In local opinion, the **Daneeji** are more trypanotolerant, hardier under poor nutritional conditions, and produce more milk in the dry season. **Bodeeji** cattle, by contrast, had the advantages that they put on more weight and commanded a higher market price, but this was not considered enough to outweigh their deficiencies.

4.2.3 Traditional Livestock Management.

The Samba are the majority ethnic group in the Ganye district, and it is from them that the Fulani who became resident learnt techniques of agriculture. Samba farming is characterised by shifting cultivation, but the land is fertile, and thus the regular movement of villages characteristic of more marginal areas only takes place at extended intervals. The principal crops are maize, guinea-corn, millet, beans, groundnuts, okra, eggplant, yams and cassava. These are interplanted in a

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[4] The terms **Daneeji** and **Bodeeji** correspond to the terms **Bunaji** and **Rahaji**, applied to 'white' and 'red' Fulani cattle in other literature.

variety of ways to maximize yields and reduce risk. The rainy season in this area is relatively long, from March to October, and sometimes allows for two maize harvests a year. Bawden & Tuley (1966:100) recommended rice cultivation as a growth staple, but rice has never become popular.

Samba men and women each have their own farms and they are entitled to profits from their own cultivation after discharging their responsibilities to the family unit. Husbands are responsible for the supply of the main staple, and women for the vegetables and sauce, as well as cooking the principal meals. Both sexes have organizations to manage collective farm labour, recruited either from clans or from local residents.

The Ganye area does not appear to produce a agricultural surplus, and there is therefore no significant marketing network to take grain to other parts of Nigeria. However, there is clearly a considerable labour surplus, and it is this labour that is invested in stock. If a Samba youth works for a Fulani stock-rearer for six months in the dry season and is rewarded with a bull, then he chooses to invest his labour in cattle, rather than producing irrigated crops for the market.

This 'investment' model reflects Samba attitudes to their own livestock. Cattle and smaller stock are regarded as flexible stores of wealth. They can be sold whenever there is a need for cash, such as for weddings, naming ceremonies or the roofing of a house. In this area, there is no other way of investing surplus labour likely to bring a similar rate of return, or produce a form of storable wealth. Samba told us that their herds had never recovered to the size they were before the rinderpest epidemics of the late 1950's because people became distrustful of cattle as a high-risk investment.

Samba do not value dairying highly and cows may be milked by anyone from their household who is available. Milk products are consumed within the household rather than taken to the market, but their avilability has

the effect of driving down the price of Fulani dairy products.

Fulani regard their herds as essentially dairy herds. Regular animal sales are not part of their livestock management strategy; although the stock they do sell supplies the national meat market. Herd management is cost-effective because it is based upon private exploitation of a public resources, namely water and pasture. Many Fulani depend almost entirely on sales of dairy products for their supply of cereal staples, and until recently, efficient livestock management was the key to their survival.

However, in a number of interviews, Fulani held up their hands to show work callouses, and indicated that they had only recently begun to farm, an activity they tend to associate with low-status. Despite their distaste for farming, an increasing number of Fulani are beginning to cultivate, a trend indicative of changes in conditions in the Ganye district. The rapid rises in prices of basic foodstuffs in Nigeria in recent years has meant that surplus dairy products, their primary resource for obtaining both cash and cereal staples, has declined in value. Milk is apparently also losing its value in relation to cereals. Previously, milk and grain were exchanged directly, often volume for volume; in other words, a calabash of milk for a calabash of grain. Fulani women selling milk in the markets during the period of the ground survey said that they could expect between one and two Naira for the contents of their calabash, which might contain milk, soured milk, or butter. As this is not enough to buy a mudu of grain [5] at current prices, this is a poor source of income, especially considering that this is the situation prevailing during the wet season.

4.2.4 Land Tenure.

The principle of land tenure among the Samba was that all land was 'owned' by the **Gang**, the chief, who had the power to awards rights in it. The

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[5] A mudu is currently the contents of a heaped medium-sized enamel bowl and thus less than half the volume of one of the large hemispherical dairy calabashes.

chief would normally have no reason to refuse a request for land, and a man or a woman could claim rights in an area of bush merely by clearing it. When the first Fulani stock-rearers entered this area, they approached the local Samba chiefs for land, and it was awarded to them in the traditional manner.

The practice of shifting cultivation has meant that rights in land were only ever weakly enforced, and this remains the situation today, partly because the Ganye zone does not produce an exportable agricultural surplus, and therefore there is no major pressure to accelerate cash-crop production.

The situation in terms of rights in grazing land is more complex, as such areas are less easily defined than the cultivated land. In the wet season, when the cattle are around the farms and compounds, both Samba and Fulani demarcate areas quite closely as their own. Pressure on grazing areas is probably only extreme in the case where nomads from other areas come down and pasture their cattle, but in this case, both Samba and Fulani combine in claiming primacy for the 'owners' of the land. The sale of land in the Ganye area is still confined to urban zones, and Certificates of Occupancy are not widely sought after.

4.2.5 The Cattle Trade.

The present-day accessibility of the main towns in the Ganye district means that the majority of cattle sold in the markets leave by truck today. Map III shows the main routes for cattle leaving the Ganye area, all of which are destined for the markets of the East, particularly Enugu. Trucking cattle to Enugu has only become economically significant since 1980, and a few traders still use the traditional trek route from Jada to Jalingo-Bali-Ogoja or Katsina Ala. The advantage of hiring a truck is that it minimises stress on the cattle. A truck carrying twenty animals could be hired for 1,000 Naira at the time of the ground survey. This represents a cost of approximately 50 Naira per head, a worthwhile investment from the point of view of a trader, in light of the possibility of one or more

animals dying on the road.

The major commercial centres, such as Jada, Ganye and Kojoli were also the largest cattle markets, because of their access to the main roads. Cattle reach the market from bush areas in one of two ways. Either their owner beats the animal to market himself, and personally deals with the large buyers, or he sells it to bush traders who walk between the camps and settlements, collecting a small herd that is then resold to the long-distance traders in the main commercial centres. Cattle sales are at a maximum during the wet season because the cattle are fattest and therefore the best price can be obtained for them.

At the time of the ground survey, this pattern had altered because of the rinderpest epidemic. The markets had been closed since April by order of the veterinary service, in order to prevent the spread of the disease. Mortality from rinderpest declined after the onset of the rains, and permission had been given for the market at Jada to open at the end of August. However, the volume of trade was low as cattle-owners were still afraid to travel to market.

However, this preventative measure had not entirely stopped the cattle trade, since Fulani assured us that owners who wished to sell their animals found buyers who moved clandestinely between herds in the bush. These animals were collected together and secretly trekked around or across the Shebshi range. After that they could be put in trucks and sent to the markets as part of the large-volume trade. There is no doubt that this clandestine trekking can act as a vector for rinderpest: however, without the co-operation of the herdsmen, there does not seem to be any obvious way of preventing it.

Rinderpest also had a dramatic effect on meat prices. It was generally, but incorrectly, believed that animals infected by rinderpest were unsafe for human consumption. At the height of the epidemic all animals offered for sale were assumed to be infected, and thus only token amounts were paid

for them, for example five to ten Naira. One consequence of this was a brief appearance of smoked-meat traders, who bought the animals at these low prices, dried the meat, and then transported it to the other side of the country, where it was sold to consumers apparently unaware of its source.

When cattle mortality began to decline and animals sold were again assumed to be 'clean', prices escalated rapidly to as much as 1,000 Naira for a breeding female in the Ganye district. There was a 'knock-on' effect on goats and sheep still available for butchering, and the prices of these were generally considered to have doubled. [6] By August, prices of cattle had begun to climb down and a large bull was selling for the more usual price of 500 Naira, breeding females for 6-700 Naira and a calf for rearing for 60 Naira.

4.3 The Mambila Plateau.

4.3.1 The Stock-Rearers.

Both Fulani and Mambila own cattle on the Plateau, although the majority of the stock remains in the hands of the Fulani. The Fulani now on the Plateau arrived both from the east, migrating through the Adamawa highlands of north-central Cameroun, and from the west, via the eastern Benue Lowlands (**RIM**,1983b). None of the earlier literature sources for the Mambila (e.g. Meek, 1931, Schneider,1955 or Rehfisch,1974) mention their ownership of cattle, although it is referred to by Crowder (1960). This trend was confirmed by the accounts of our informants, who said that Mambila first began to get cattle from the Fulani about twenty-five years ago. There may be a connection with the construction of the escarpment road, which began at the end of the colonial period, and presumably

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[6] Prices of goats and sheep were high during the ground survey for another reason; Sallah was the following week. 'Usual' prices for goats were said to be 15-25 Naira and for sheep 20-40 Naira. However, goats were being regularly sold for 40-60 Naira and sheep for 60-120 Naira.

improved the inter-regional cash-flows in the area, in particular increasing the export of cola, a trade item that has been coming down from the grasslands to the lowland towns since the beginning of the colonial era.

Mambila began by working for Fulani, and being rewarded by a bull for every six months they worked. However, the expansion of the cash economy on the Plateau meant that there were also considerable profits to be had by simply selling the Fulani surplus grain for cash, and buying calves on the open market. As relations with the Fulani have been poor throughout most of this century (**RIM**,1983c), most Mambila, particularly in recent years have preferred to buy cattle. The Kaka people, in the southwest of the Plateau, were reported to have recently begun domestic cattle-rearing, but this is at present apparently on a small scale.

4.3.2 Cattle Breeds.

Unlike the Ganye area, Fulani on the Mambila Plateau expressed the opinion that there were no major economic considerations to take into account when choosing one breed of cattle in preference to another. The three breeds of cattle widely recognized in southwestern Adamawa, the **Daneeji**, **Bodeeji**, and **Gudali** are all present, although the red **Bodeeji** is in the majority, particularly in the central regions (**RIM**,1983a:16-18).

This pattern derives from the historical sequence of Fulani movement onto the Plateau. The first waves of herdsmen came across from Camerounian Adamawa via Banyo (**RIM**,1983b) in the late nineteenth century. These Fulani bred the prestigious **Bodeeji**, and they had immediate access to the river valleys, and wetter, more fertile lowlands. During the course of this century, other Fulani populated the drier upland areas on the northern and western edges of the Plateau. These Fulani reached the Plateau via the tsetse-infested Benue lowlands, coming originally from the Jos area. Many of them already herded **Daneeji** and **Gudali**, while those who had previously herded **Bodeeji** substituted the 'white' breeds because of their reported greater trypanotolerance.

This historical pattern has been maintained because there are no pressing reasons for stock-rearers to change the breed their **lenyol** [7] traditionally herded. In the favourable conditions of a high-altitude grassland the breed of cattle is a matter of indifference. If the pattern of high dry-season mortality recorded in 1982-3 is maintained, however, during the rest of the century, it is likely that there will be a gradual switch from **Bodeeji** to **Gudali** and **Daneeji** because of their reputation of greater hardiness under famine conditions.

4.3.3 Traditional Livestock Management.

Almost all the Fulani herds on the Plateau today arrived there as a result of a nomadic migration during the course of this century. Today, however, they are all settled stock-owners, who either send their herds on transhumance in the dry season or hire others for this task. Rehfisch (1974 but based on work in the early 1950's) refers to nomads several times, and it seems likely that the population density during that period was sufficiently low for nomadism to be feasible.

The Plateau, as all our informants agreed, had been an almost ideal environment for herding cattle. However, pressure on the land has become so extreme that permanent settlement is the only method of retaining a claim to land that is not otherwise developed. In the eyes of both Mambila and Fulani, the whole Plateau is 'owned', that is, rights to either graze or farm have been assigned to families or individuals and these are inalienable within the traditional system of rights and obligations. In practice, of course, it is more feasible for a farmer who actually has hoed and planted land to assert his claim, than a herder who merely grazes his cattle there.

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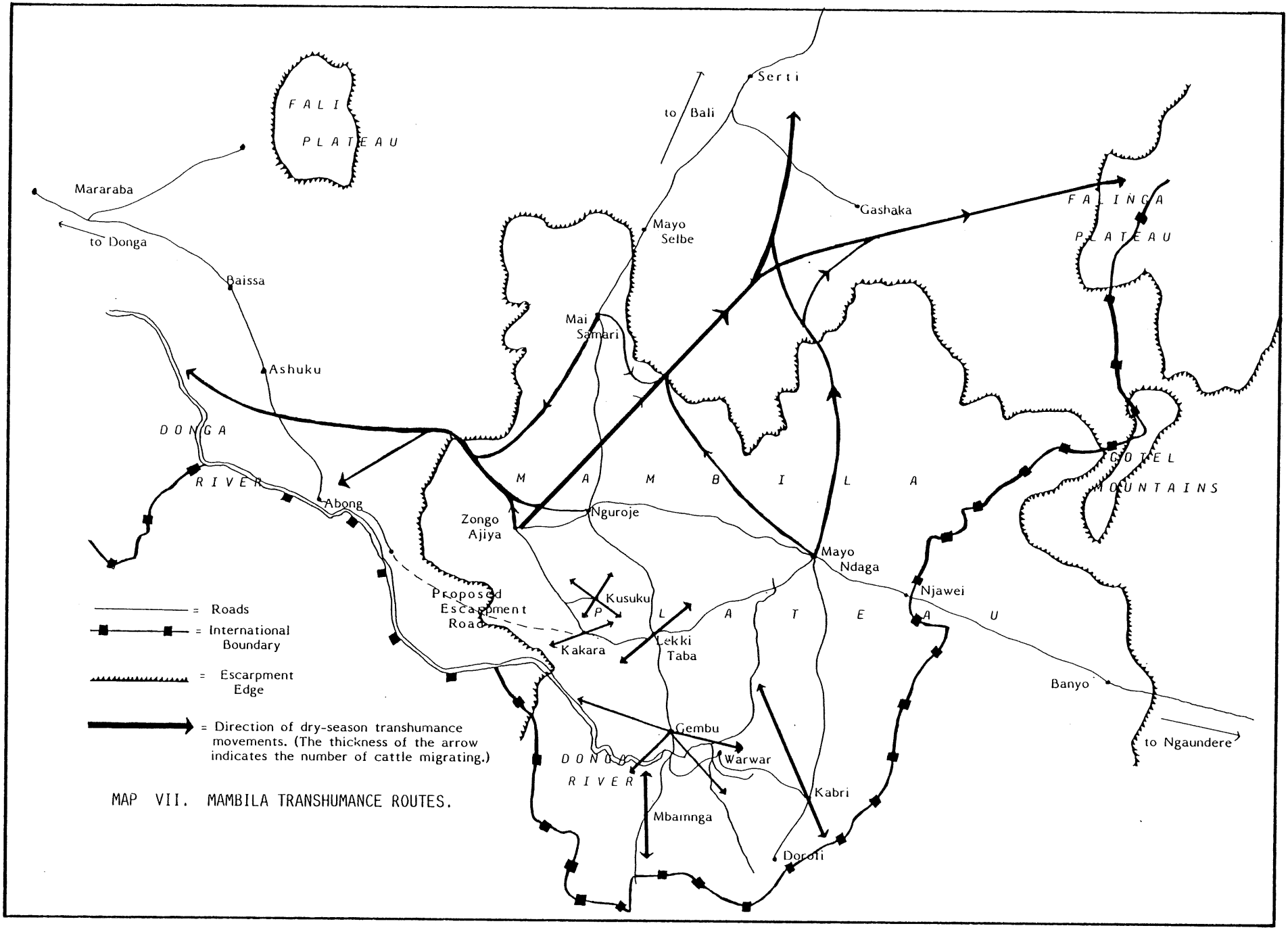
[7] **Lenyol** refers to the clans or larger subdivisions of the Fulani. A complete list of the **lenyol** in the Toungo Block area is given in **RIM**, 1983b.



MAP VII. MAMBILA TRANSHUMANCE ROUTES.

Fulani herds on the Plateau are large, with 500-1000 animals a not uncommon size. The erosion of the Plateau, and the replacement of preferred grass species by the poorer species has meant that the 310,000 cattle recorded in the wet season by RIM (1984a:14) exceed the dry season carrying capacity of the land, and that if the animals were not moved to a river basin where there is pasture and water, malnutrition would inevitably result.

Traditionally, herds move in two directions; towards the Donga river valley and adjoining river valleys in Cameroun, and down the escarpment to the Mayo Selbe and other rivers north of the Plateau (Map VII). However, this arrangement was abrogated by the establishment of national boundaries after the Referendum of 1962. The Cameroun Republic is no longer willing to allow the movement of large herds across the border, although as a result of an agreement last year, 10,000 head were permitted to cross. The Mambila farmers who control the Donga river valley have never been happy about the transhumance of the upland herds in the dry season, and since 1979 they have used their power in the local Government to prevent it. As a result, many Fulani were unable to send away more than a small proportion of their herds, and mortality due to malnutrition during the 1982-3 dry season was reported to be between five and ten percent.

The traditional Fulani characteristic of avoiding any physical connection with farming has broken down on the Plateau. Almost all Fulani compounds in the uplands are surrounded by a plot of maize, cultivated either by the family or by hired labour. This reflects the absence, especially in the northern regions of the Plateau, of a sufficiently large surplus-producing agricultural population to provide a regular supply of cereal staples, and the uncertainty of relations with the Mambila.

Fulani farms are, however, 'minimal' exercises, supporting only sufficient maize to supply the family unit with a cereal staple. Vegetables are still bought from the primary producers, the Mambila, along

with firewood, a scarce and expensive resource on the Plateau. The wealth of the Fulani, and their unwillingness to become competitive farmers, has resulted in considerable profits for the Mambila; profits that have been invested both in tin roofs (cf. Fig.14, RIM,1983a) and in cattle bought at the market. Fulani do not at present produce any dry season fodder, although they agreed that in view of the persistent lack of dry-season grazing, fodder banks would be a sensible solution. In 1981, the Gembu Local Government imported feed in the dry season and this was made available to graziers at a subsidized price. Whether herders would be willing to pay the full market price of such fodder remains to be tested.

Mambila stock-rearing practices closely resemble those of the Fulani, except that the Mambila are opposed to transhumance, because their larger farms require more attention. Like the Samba, they conceive of stock, either purchased or earned as wages while working for Fulani, as a store of wealth, to be cashed in when they require money. Most Mambila herds are small, not generally above forty animals, and often only 5-10. As it is inefficient for an individual to herd such a small number, groups of Mambila owners often club together to hire a herdsman, or alternatively, their own sons herd the cattle in rotation. Mambila herds are taken only short distances in the dry season, to graze at a nearby stream, and are usually brought back to the compound at night.

Milk sales play no part in the household economy of the Mambila, and the dairy production of their herds is consumed directly by the family and kin, or else given to the herdsman as part-payment for his services. Because the Mambila use green manure, cattle-dung is not highly valued, and therefore not integrated into agricultural practice. The Mambila do not make dry-season fodder, because their herds are generally small enough not to be threatened by the shortage of pasture in the dry season.

4.3.4 Land Tenure.

The principles of land tenure among the Mambila people have been discussed by Rehfisch (1974:34 ff.). Land is vested in the clan and was

traditionally claimed by any individual who cleared and cultivated it. The grassy uplands were considered to be communal 'hunting land' but all other land was individually owned. When land was ceded to Fulani graziers for their cattle, the principles of individual ownership were applied, although the Fulani did not initially clear the land for cultivation. Since on the Plateau, there are substantial variations in the fertility of the soil according to proximity to rivers, the most valuable land was passed from father to son and mother to daughter.

The expansion of the Mambila population has caused considerable pressure on land in this century, and the Mambila communities in Cameroun are said to have migrated there in search of farmland. In the mid-1940's Mambila elders attempted to prevent sales of land (Rehfisch,1974:42), but land is regularly bought and sold today. The cattle brought in by the Fulani during the course of this century originally were confined to the uplands, only moving to riverbanks in the dry season. However, more recently, Fulani and Mambila have begun to compete for similar land, as Fulani have begun to farm and Mambila to herd cattle.

Certificates of Occupancy issued by the Local Government have been sought after for some years, but recently a number of the larger stock-owners have been attempting to obtain the State-issued certificates. The usual sign of a claim to land is the erection of a stake and barbed-wire fence around the entire plot.

4.3.5 The Cattle Trade.

Cattle-markets are widely distributed throughout the Plateau, the most important being Mayo Ndaga, Zongo Ajiya, Gembu and Nguroje. They are controlled by the veterinary service, and in theory each animal passing through them must receive its 'tike' or certificate of health. The cattle are bought by traders or their agents and then trekked to the bottom of the escarpment, where they may either be put in trucks or trekked by foot to the large buying markets (Map III). The Plateau presents considerable problems for the effective marketing of cattle, since in order for a

trader to make a profit, he has to herd animals down the escarpment, cross the tsetse-infested lowlands, and reach Katsina Ala, Ogoja, Abakaliki or another cattle-buying centre, while keeping his stock fat and free from disease.

Levels of profit for successful cattle traders are substantial. 1983 was an unusual year because the rinderpest epidemic had forced up the price of stock. After the peak of the epidemic, when animals were considered 'clean' again, mature bulls were selling in Enugu for over 1,000 Naira. This represented about a 200% mark-up on the producer price on the Plateau. In a normal year, prices quoted were;

Mature Bull	200 Naira
Weaned Calf	60 Naira
Cow in Milk	600 Naira
Barren Female	150 Naira

However, from the Plateau, reaching a trucking point in the wet season was often a week's journey and given that to reach the markets would then only be another two weeks, traders often decided to maximise their profits and trek the cattle overland. The construction of an all-weather road to the Plateau would clearly affect this pattern, if large trucks could climb the escarpment on a regular basis.

In view of the involvement of Igbo and Tiv traders in the trucking business in the lowlands it is surprising that they play no role in the trade on the Plateau. The principal livestock entrepreneurs are Hausa, Fulani, Mambila and Shwa Arabs. Traders fall into two categories, those who herd the cattle themselves, and those who provide the capital, but hire others to do the work.

Under normal circumstances, traders on the Plateau who intend to trek their cattle to the East have to put up about 15,000 Naira to collect a

herd of sixty cattle, an average herd for trekking. They move from market to market on the Plateau, buying animals until their herd is complete. This may take anything from two to four weeks according to the time of year. There are two principal routes down the escarpment; to the north, connecting with the Mayo Selbe-Serti road, and to the west, crossing the Abong-Baissa road.

This year, the rinderpest epidemic had altered traders usual strategies, because the veterinary service had closed the livestock markets on the Plateau, in the hope of preventing the spread of the disease. The traders then moved clandestinely across the countryside, buying cattle in private deals from their owners directly. The herds seem to have been moved at night, in order to avoid too much public notice. An unfortunate side-effect of this may well be to spread rinderpest; but, given the logistical problems of effective vigilance over such a broad region, it is difficult to see how such an activity could be entirely prevented. The cattle are then herded off the Plateau, taken through open countryside, circling round veterinary checkpoints such as Mayo Selbe, and thence via the usual routes to the markets of the East.

4.4 The Eastern Benue Lowlands.

4.4.1 The Stock-Rearers.

The third zone with a relatively high wet season stocking rate (**RIM**,1983a:Fig.3) is the long strip east of the Benue river, along the line of the new Wukari-Jalingo road. It forms a less geographically coherent unit than either the Ganye district or the Mambila Plateau, and is ecologically more diverse, including swampy lowlands, dry guinea savannah and one high-altitude grassland, the Fali Plateau. Cultivation density is low generally throughout this area (**RIM**,1983a: Fig.12), although it increases in the southwest, towards Wukari and the Jukun and Tiv areas. The clustering of cultivation along the edges of roads revealed by aerial survey suggests that the building of roads can act to open up new agricultural land.

The diversity of the area is reflected in the broader variety of ethnic groups inhabiting it (Map V.), and the varied origins of the principal cattle-rearers, the Fulani (**RIM**,1983b). Traditionally, the Tiv and Jukun peoples in the southwest raised the dwarf West African shorthorn, but this practice has virtuallly ceased. Some wealthier Jukun farmers have invested in Fulani humped cattle, while the Tiv people now prefer to raise pigs. Apart from a few Ndoro along the Bali-Serti road, none of the peoples in the Benue lowlands have adopted Fulani pastoral practices, in contrast to the Ganye and Mambila regions. A likely explanation is that the Fulani have only been coming to the lowlands regularly in the last twenty years (**RIM**,1983b:18) and that the majority are nomads, whose long-term interaction with the agricultural populations is limited, unlike the sedentarized Fulani of Ganye and Mambila.

4.4.2 Cattle Breeds.

Aerial survey data (**RIM**,1983a: Fig.7) showed that the 'white' breeds, **Gudali** and **Daneeji**, predominate throughout this area in the wet season, except for a small strip west of Bakundi. According to our informants, many of the Fulani **lenyol** that crossed the Benue already possessed **Daneeji** and **Gudali**, and those with **Bodeeji** cattle switched to 'white ' breeds, in view of their alleged trypanotolerance. The small pockets of **Bodeeji** were due to the incursions of nomads from further north, who have sought refuge from the rinderpest epidemic in the Benue lowlands.

4.4.3 Traditional Livestock Management.

In this area, only Fulani, Ndoro and Jibu raise cattle. The dispersal of the Ndoro and Jibu has to date prevented the collection of information about their stock-raising practices, but discussions in Mayo Selbe suggested that although their herds are usually small, they practice transhumance. Fulani movement into this area is recent (**RIM**, 1983b), presumably due to the high level of tsetse infestation.

The Fali Plateau, a high-altitude grassland, seems to have been populated by a mixture of 'Fali' (perhaps of Samba origin) and Ndoro prior to 1950, but now the Fulani constitute the majority of its inhabitants. Informants said that the Plateau was an almost ideal locale for stock, and that 'we throw away milk for lack of anyone to sell it to'; in other words, the pasture is so attractive that the lack of a market for dairy products has to be endured. The Fulani who live on the Plateau remain there all year round, although some owners with large herds send the excess animals down to the lowlands in the dry season. Map VIII synthesizes available information on transhumance routes in the whole of southwestern Adamawa.

In the lowlands, apart from small communities around Wukari and Ibi, the stock-owning Fulani are almost all nomads Interviews in Bibinu, Mararaba, Gassol, Bali and Mayo Selbe failed to reveal even one large livestock owner who claimed to live in the area all year round. Under usual conditions, herders migrate from the Jos Plateau, from Bornu and sometimes from Cameroun into this area every dry season, and return there in the wet. Their presence in the 1983 wet season, (**RIM**,1983a: Fig.3) was a response to the rinderpest outbreak; the strategy being to remain in remote bush areas to prevent contact with infected herds. One consequence of this has been an extremely low vaccination rate compared with Ganye or Mambila.

4.4.4 Land Tenure.

The relatively low human population of the Benue lowlands (**RIM**,1983a: Fig.10) has meant that until recently pressure on land has been slight. Tiv yam farmers have begun to settle along the borders of the roads throughout this area. Land tenure has traditionally been vested in the rulers of each area, who would assign an area of bush to a prospective farmer, who gained title to it by clearing the bush.

The transhumant Fulani who have been coming into this area since 1950 (**RIM**,1983b:18) usually claimed grazing areas for their cattle by agreement with their Ardo and other herdsmen. They cleared obstructive trees, occasionally dug wells, and put up their traditional 'beehive' dwelling,

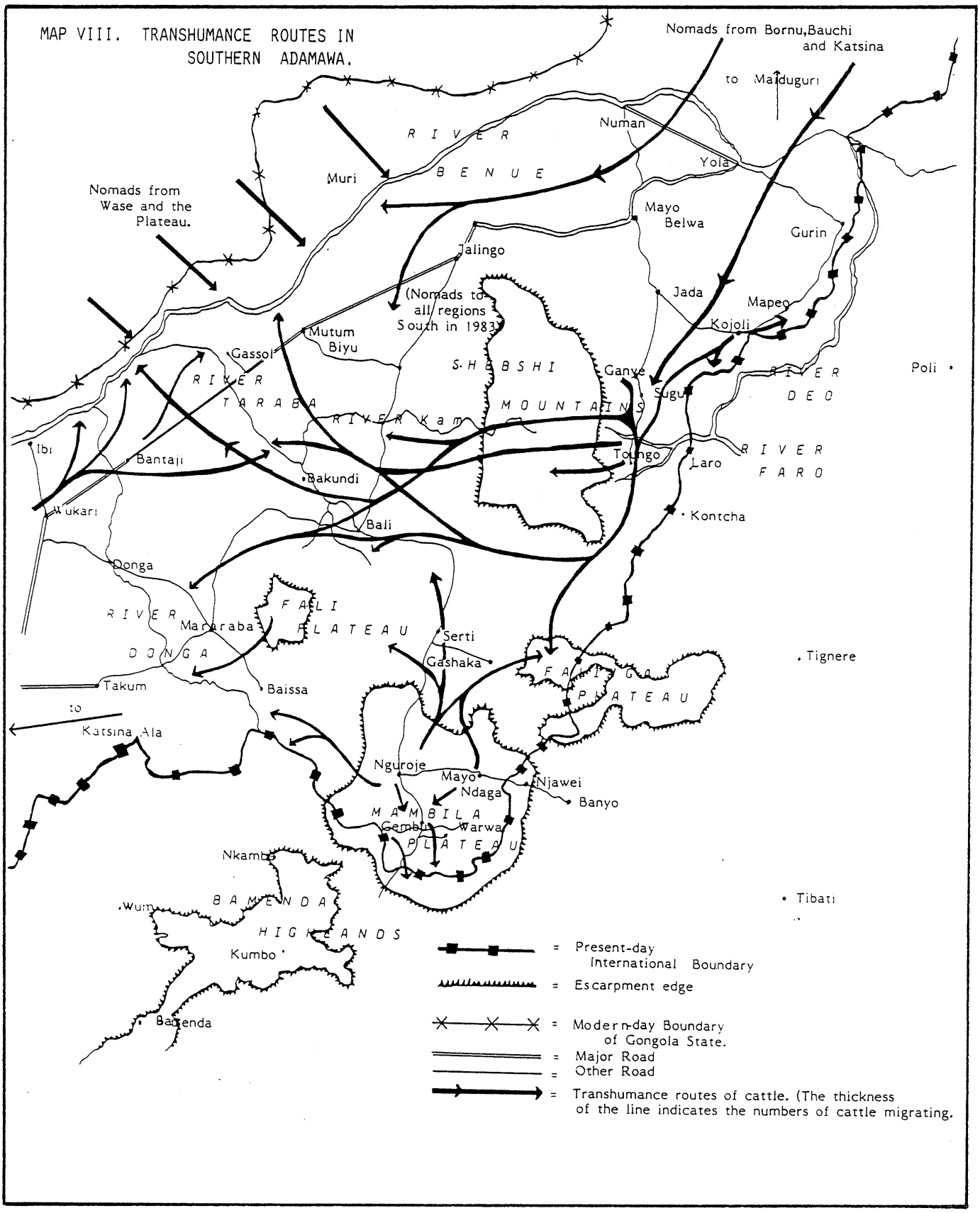
the **ruga.** This has the effect of making such an area attractive to an incoming farmer, since the cattle have often manured it for a number of years in succession. However, recently, Fulani returning to their grazing area have found their **ruga** burnt, the land dug up for yams, and the well surrounded by a fence to make access for their cattle impossible. Many of the Fulani interviewed claimed to have attempted to seek redress in the local courts, but without success.

4.4.5 The Cattle Trade.

The absolute volume of cattle sold from herds in the Benue lowlands appears to be much less than from the Ganye and Mambila districts. This is because the majority of the cattle are herded by seasonally migrating nomads. Nomads are, by their own account, much less willing to sell animals than sedentary Fulani, partly because they have a lesser requirement for cash.

Even quite large settlements such as Bantaji and Gassol have only token cattle markets, while Mararaba and Bali are without them. However, the whole of the Benue lowlands acts as a 'funnel' for stock moving from all parts of Gongola State to the markets of the East. At the time of the ground-survey, a number of traders from the Ganye district, put out of work by the closure of the markets due to rinderpest, had moved down to the Mararaba-Takum area, where there were large herds of cattle unaffected by rinderpest belonging to nomadic Fulani. The traders were moving from camp to camp in the bush, buying single animals. When they had collected between fifty and seventy cattle, they would trek these as far as Abakaliki to sell.

The abnormal distribution of cattle due to rinderpest made it difficult to establish 'ordinary' prices -indeed the presence of cattle in many of these areas was sufficiently unusual for a local price not to be established.


MAP VIII. TRANSHUMANCE ROUTES IN SOUTHERN ADAMAWA.
Nomads from Bornu, Bauchi and Katsina
to Maiduguri
Numan
Yola
Muri
RIVER BENUE
Nomads from Wase and the Plateau.
Mayo Belwa
Gurin
Jalingo
(Nomads to all regions South in 1983)
Jada
Mapeo
Kojoli
Mutum Biyu
Gassol
SHEBSHI MOUNTAINS
Ganye
Poli
Sugu
RIVER DEO
RIVER TARABA
RIVER Kam
Ibi
Bantaji
Bakundi
Toungo
Laro
RIVER FARO
Wukari
Bali
Kontcha
Donga
RIVER DONGA
Mararaba
FALI PLATEAU
Serti
Gashaka
Tignere
FAMINGA PLATEAU
Takum
Baissa
to Katsina Ala
Nguroje
Mayo Ndaga
Njawei
Banyo
MAMBILA PLATEAU
Gembu
Warwa
Nkambe
Tibati
BAMENDA HIGHLANDS
Wum
Kumbo
Bafenda
= Present-day International Boundary
= Escarpment edge
= Modern-day Boundary of Gongola State.
= Major Road
= Other Road
= Transhumance routes of cattle. (The thickness of the line indicates the numbers of cattle migrating.

SECTION V.

DEVELOPMENT ASPECTS

Previous sections have discussed the background to the Toungo Block and its livestock production systems. Certain aspects, such as disease, land tenure and credit schemes, were identified as the principal constraints on increased livestock production, and these topics have therefore been reserved for this section. Graziers and farmers were asked to list all the constraints on livestock production they experienced, and their responses are discussed systematically in section 5.2.2.2. The role of intervention in the settlement trends of nomads is considered in Section 5.2.3. A final section deals with a problem central to development, the communication of the ideas of the development agency to those whom its policies are intended to assist.

5.1 Constraints on Traditional Livestock Production.

5.1.1 Disease.

5.1.1.1 Rinderpest.

The recent rinderpest epidemic had a profound effect on almost all aspects of cattle production in the survey area, and discussions with livestock producers were inevitably dominated by it. It is believed to account for the apparently abnormal distribution of cattle in the Benue lowlands as shown by the aerial survey (**RIM**,1983a).

The first suspected cases were reported from the area during the December 1982-January 1983 period, but no large-scale vaccination programme was initiated until April-May 1983. In the early stages, veterinary officers indicated that difficulties were experienced both in the supply of vaccine itself, and in the infrastructural support necessary to administer it effectively. For example, there was a reported early shortage of saline solution, fridges, syringes, ear-clippers and transport for veterinary staff. Considerable mortality occurred in certain areas of

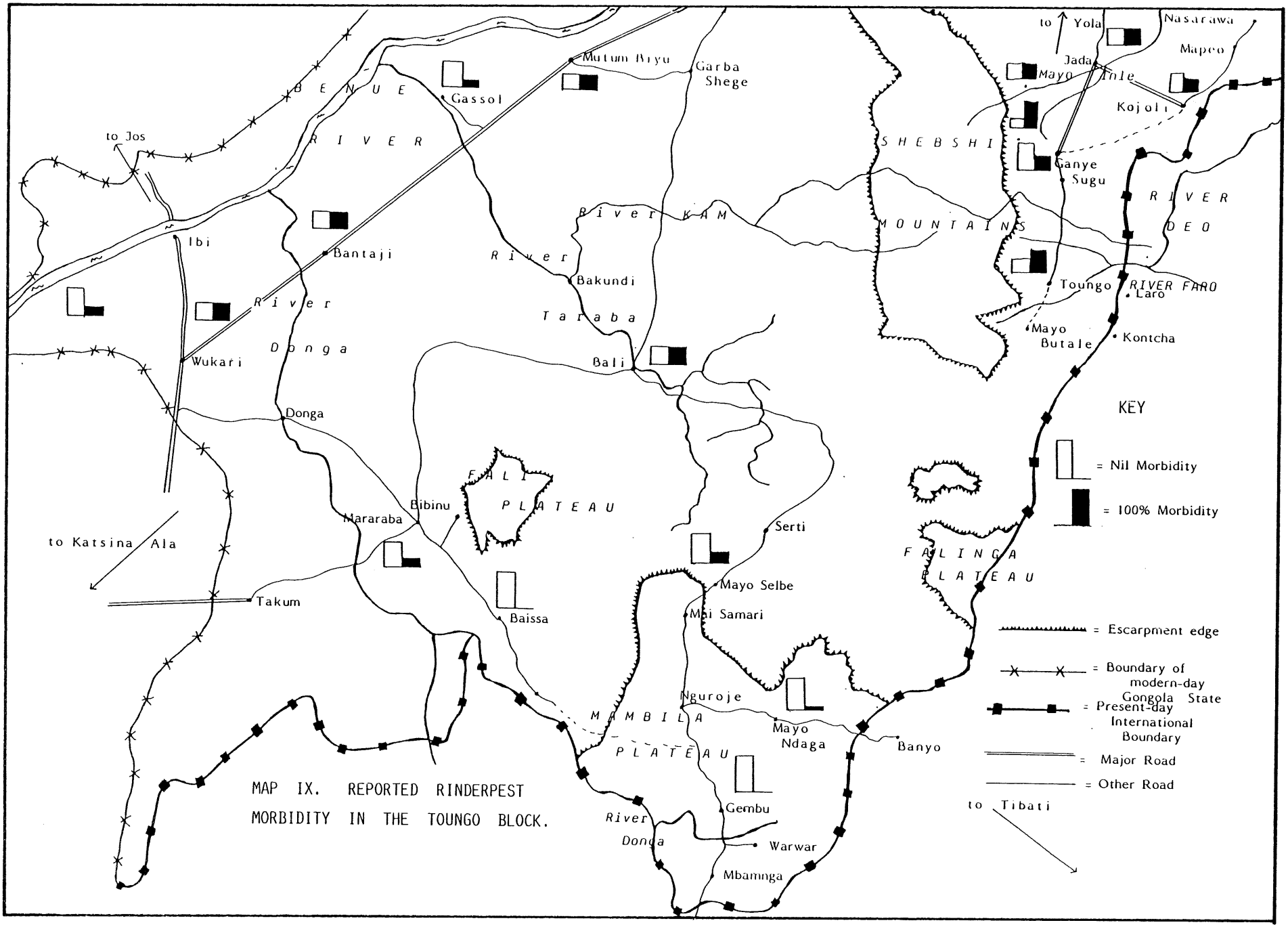
the Toungo Block.

At the same time, herders were misinformed about certain aspects of the nature of rinderpest vaccination in ways that clearly contributed to the problem. For example, there was a general conviction that the more vaccinations an animal has had, the more effective the vaccination would be. As a result, considerable ingenuity was expended in deceiving veterinary assistants into vaccinating a herd several times. As a result, the actual number of cattle vaccinated may have been less than reported.

Another widespread misconception was that refrigeration is not important in the storage of the vaccine. Most veterinary assistants were aware of the need for cold storage, but were hindered by the lack of refrigeration facilities. Most Fulani, however, were unaware of this need and believed vaccines to operate like various other medicines. Some of the more enterprising Fulani were able to obtain large quantities of vaccine for themselves, and had injected their own herds, in an attempt to protect them.

Stock-rearers regarded the rinderpest epidemic as the most serious problem they were facing. There seemed, however, to be little conception of the way that rinderpest is spread. Once rinderpest had entered a herd, measures were rarely taken to prevent the cows from coming into contact with one another, and thus spreading the disease through their saliva. Although Fulani drive their herds into remote bush areas to avoid contact with other possibly infected herds, they rarely take measures to prevent cattle traders passing from camp to camp, in an attempt to circumvent the closure of markets. Fulani believe that the infection can be spread by transporting infected meat from dying animals, but they have taken no practical steps to prevent this from occurring.

Finally, there appears to be no consistent policy of either preventing herd movement after vaccination has taken place, or even of burning dead animals in herds where infection has definitely occurred. Veterinary



MAP IX. REPORTED RINDERPEST MORBIDITY IN THE TOUNGO BLOCK.

assistants on Mambila, where the outbreak was confined to a few herds at the time of the ground survey, have been destroying infected herds, but this practice was not common elsewhere. Those Fulani who live along the border with Cameroun reported that the slaughter and burning of infected herds is a government policy there, and as a consequence, herders had crossed the border into Nigeria to avoid this threat.

Mortality from rinderpest at the time of the survey was high but restricted to certain areas. Map IX shows estimates of mortality for the major survey zones, based on conversations with stock-rearers and veterinary officials. Such estimates are, of course, unreliable, especially as it is in the interest of stock-rearers to inflate levels of animal mortality, but they do provide some indication of the magnitude of the problem. In view of the importance of the Mambila Plateau in the livestock economy of the country, and the small impact of rinderpest to date, effective infrastructural support for local veterinary officers would seem to be a priority.

In general, two requirements emerge from the present rinderpest situation. The first is to enable the veterinary service to deal with rinderpest adequately from the biological point of view. The second is to make a greater effort to inform stock-rearers about the causes and consequences of rinderpest. A successful campaign depends ultimately on the co-operation of herd-owners and this will only freely be given if some of their misconceptions are dissolved. This is one aspect of a more general problem, that of communicating adequately with the stock-rearers, discussed further in Section 5.2.4.

5.1.1.2 Trypanosomiasis.

With the exception of rinderpest, the trypanosomiasis associated with the tsetse-flies is the single most frequently reported disease problem throughout the Toungo Block. In a normal year, the prevalence of tsetse is the major factor that a herd-owner has to weigh up against the attractions of otherwise desirable pastures and river-valleys. RIM,1983a, Figure 4.

shows the conjectural limits of Glossina morsitans, but it must be admitted that this map is based on out-of-date survey material. Stock-owners reported the spread of tsetse both on the high altitude grasslands of the southern Shebshi range, and in the lowlands east of the Shebshi around Toungo town. Both the Kiri and Fali Plateaux were reported to have recently become infected. Some of the preliminary maps prepared by FDPCS, on the basis of their own more recent surveys, show increases in infestation, and changed distributions for the different species of Glossina. A priority in the planning of development projects in the area would be more reliable information on the present degree of tsetse challenge.

A problem in discussing tsetse infestation with stock-owners is the terminological confusion that results from translating the English term 'trypanosomiasis' by the Fulfulde **jola. Jola** applies to a wide variety of symptoms that herders associate with biting flies. The Fulfulde term **bubi silon** is usually taken to refer to Glossina spp. but it may also be used for other species of biting fly. Symptoms of **jola** described by herders, such as wasting, may well be due to a variety of other parasitic and tick-borne diseases.

The Fali and Kiri Plateaux should be above the altitude limit of the tsetse fly, and surveys in the 1950's and 1960's showed that these were free of fly (Bawden & Tuley,1966, Howell-Davies,1977). There are several possible explanations for the expansion of the tsetse belts in the area of Toungo. The Gumpti Game Reserve and the Faro Game Reserve on the other side of the Cameroun border are associated with an expansion of wildlife, and a likely consequence of this is an increase in tsetse. However, neither of these reserves was established long enough ago to account for the reportedly rising tsetse infestation, as this dates back some fifteen years. Alternatively, the decline of the route through Mayo Butale south to the Serti road, has meant that farmers are moving out of the area, and this has caused a decline in hunting pressure, and an increase of fly vectors. Locally it is said that farmers are moving out of the area due to an

increase in biting flies.

The distinction between riverine and savannah species of biting fly is not usually made by informants, but may be of crucial importance in reconciling accounts of the expansion of infestation. It is argued in Working Paper VI (**RIM**,1983d), that some species of fly adapted to gallery forest can survive without wildlife vectors, by staying at river-crossing points, used sufficiently often by cattle to provide the flies with a regular blood-meal.

Another possible explanation is the increase in stock movement. The expansion of the meat trade in Nigeria means that the number of traders, passing from herd to herd buying individual animals to build up a herd large enough to trek to the markets of the East, have increased. If flies are able to travel with such herds and survive, they may well be passed to new hosts in resident herds, whether the wild animal vectors are present or not.

The movement of nomads in this area is also believed locally to account for re-infestation of sprayed areas. An area south of Ganye sprayed by FDPCS in 1981 remained free of fly for only four months. It was said that shortly after it was sprayed, numbers of nomadic Fulani brought their stock into the area, and that this was the reason for the re-infestation of the sprayed zone.

In view of the uncertainty about the status of tsetse infestation in the Toungo Block, an urgent development priority is a vector and disease survey, combined with an investigation of the significance of Fulani claims about the prevalence of trypanosomiasis.

5.1.1.3 Other Diseases.

A valuable survey of the cattle diseases recognised by Niger Fulani, and their names in Fulfulde, is provided by Maliki (1981). In the Toungo Block, the principal diseases named by veterinary officials, apart from

the complex of symptoms associated with tsetse are CBPP (Contagious Bovine Pleuro-Pneumonia), Haemorrhagic septicaemia, Foot and Mouth disease and Blackquarter. The diseases recognised by the Fulani do not precisely correspond to these, but the following table gives the Fulfulde names for bovine diseases, together with their English equivalents, where these could be determined;

Fulfulde	**English**
Bakkale	Swollen knees and feet.
Balki	Liver-fluke [=leech?].
Bolle	Pustules on skin [=wen?].
BunsuuDe	CBPP
Dawuda	Schistosomiasis
Gillu =**Gooli**?	Disease of small bulls.
Haraba'o	Anthrax
Heenre	Kidney disease [**Henyre**='liver'].
Jola	Trypanosomiasis
Kiko	Asthma
Mbooru	Foot and Mouth disease
Ngappu	A disease that kills young calves.
Noppi	Ear disease [**noppi**='ears'].
Petto	Rinderpest
Saamoore	Earth-eating

Stock-rearers interviewed emphasized, however, that these were hardly more than a nuisance compared with rinderpest, although there have been serious

epidemics of CBPP in the past (cf.Hurault, 1964).

The supply of drugs to treat these diseases appears to be very inadequate. In most areas, stock-rearers asserted that even worming medicines were not readily available. Only in the Ganye area, did suitable drugs still seem to be available. Fulani often buy medicines in the market and are well used to treating their own cattle. More information should be available to stock-rearers concerning the use of drugs. Presently a certain amount of illicit drugs are available to the Fulani through unqualified personnel. However, such supplies of unofficial medicine appear to have largely ceased, except along the Wukari-Jalingo road, where the drugs are reportedly coming in from Makurdi. Fulani have quite a considerable repertoire of traditional remedies for common stock diseases. How effective these are has never been properly investigated. Fulani have, in recent years, become increasingly dependent upon the relatively cheap, effective Western drugs. Such dependence requires a regular supply of such drugs and shortages are greatly resented by stock-rearers who have come to require such government support.

Increased priority should be given to upgrading Government veterinary services, and in addition, consideration should be given to the option of permitting private veterinary services and licensed private drug-suppliers to operate. This would assist government services in an area that supports such an important sector of the national herd. Such a development was suggested by the herders themselves.

5.1.2 Drought.

Evidence of the probable widespread drought in the Sahel during the 1983/4 dry season was just becoming apparent while the team was engaged in groundwork, and more recent reports have confirmed the scale of the drought. In view of previous experiences of drought in West Africa (Gallais,1977), it is probably worth considering the significance of drought for livestock production systems in the Toungo Block.

The immediate effect of drought in the Sahel will be to encourage nomadic herders to come further south in search of regular supplies of water and pasture, regardless of the risk of disease. This will increase the stocking rate throughout the Toungo Block, but especially in the Benue lowlands where overall cultivation densities are low (**RIM**,1983a) and there is sufficient space to contain the large herds of the nomads.

During the dry season, the threat from disease is at its peak because cattle are thin, and therefore less able to resist it. The uncontrolled movement of nomads in this way could have the unfortunate effect of retransmitting both rinderpest and a wide variety of stock diseases to herds throughout this area.

5.1.3 Access to Pasture.

5.1.3.1 Co-operation and Conflict between Farmers and Graziers.

Within the regions of the Toungo Block stock-raisers and farmers have a wide variety of interdependent relations. Farmers allow cattle to graze on crop residues in order to benefit from their manure. Meat and dairy products are exchanged for cereals, either indirectly through sale in the market or by direct trade. In the case of the Samba and Mambila, younger men work as herdsmen for the Fulani in order to obtain stock.

Relationships of this type are by no means uniformly good and Working Paper IX (**RIM**,1983c) considers in more detail the factors that account for this. Broadly, conflict between farmers and graziers can be attributed to three principal causes;

a) Competition for limited land resources.

b) Traditional dominance relations between the stock-raisers and the farmers.

c) Incompatible farming systems; the Tiv, for example, do not farm cereals, while the Mambila combine a green manure with the interplanting of maize and tubers. As a result, neither group are willing to allow cattle

to graze on arable land.

Strategies for the encouragement of mixed farming as a part of livestock development must therefore take these three factors into consideration.

At present, farmers do not plant forage crops specifically for livestock, but the making of dry-season fodder from cereal residues is established among the Samba and Mumuye. In view of the increased difficulties experienced by transhumant stock-rearers in recent years, there is reason to believe that farmers would be receptive to the introduction of forage crops, and that these would find a ready market among graziers. Moreover, it would create a further basis for co-operation between the two groups and encourage the spread of mixed farming techniques.

5.1.3.2 Overgrazing.

Complaints about overstocking on the Mambila Plateau have been current in the literature (Bawden & Tuley, 1966:111 ff.) since the first recommendations for improving livestock management there. Evidence that the Mambila Plateau is both overgrazed and overstocked comes from the widespread sheet and gulley erosion, and the replacement of grasses such as Hyparrhenia spp. with the poorer quality Sporobolus spp. and bracken. Stock-owners on the Plateau do recognize that the excessive numbers of cattle are largely responsible for this situation.

The question of overstocking was discussed with herders throughout the Plateau, and while they agreed that destocking was desirable in principle, nowhere did anyone express willingness to begin the practice. Herders tended to suggest that the government make dry season feed available at subsidised prices. This would however not solve the problem, and could in fact lead to additional difficulties created by reliance on such supplies.

The prevalence of erosion can be related to the lack of demarcated individual land rights assigned to graziers. Because grazing land is vested in the community, individuals do not feel responsible for the

condition of any particular stretch of land. If his cattle eliminate the grass cover, then the obvious response is to move them to an adjoining stretch.

From the point of view of the grazier, there is a certain ambiguity about the retention of rights in a specific area of land. Although many herders expressed the desire for a Certificate of Occupancy, they had not usually considered the consequences of their neighbours also obtaining such certificates. The subsequent fencing off of land throughout the Plateau would restrict free movement of stock.

5.2 Intervention.

5.2.1 Credit and Loans Schemes.

5.2.1.1 Loans in Traditional Society.

Before discussing the willingness of herders and farmers to participate in national loans schemes, it is useful first to know how credit and loans schemes operate within their traditional society. This is likely to be a partial guide to the speed of uptake of credit schemes introduced by external agencies.

A fundamental rule binding together most of the societies surveyed in the Toungo Block, is the paramount importance of kin relations. Kin are most likely to assist an individual in his economic difficulties and are least likely to demand exact or prompt repayment of such assistance. One of the features of Fulani society not mirrored in other agricultural societies is the possibility of catastrophic losses due to epizootics. This has been a historic liability of herders, and their social structure has partly evolved mechanisms to compensate for it. One of these is extensive 'exchange' loans, where owners of large herds loan them to other Fulani living in peripheral areas. The reasons are twofold; to have the cattle managed by experienced herders, and to have them as reserves in the case of epizootics. The benefit for the man who herds them is that he receives the profits from the sale of the dairying, and also a small bull

every six [1] months. Owners of large herds 'exchange' cattle so that they retain a herd somewhere under all conditions.

In other circumstances, if a nomadic Fulani loses his entire herd through disease or mismanagement, then his relatives will normally loan him animals from their own herds. He is permitted then to raise the offspring of these animals as the nucleus of his new herd, and eventually the animals he has 'borrowed' or equivalents are returned to the owners without interest.

5.2.1.2 External Credit Schemes.

The LPU livestock-fattening scheme was in many cases the only loan scheme that stock-rearers had any experience of, so it is difficult to assess how effective other loan and credit schemes would be, especially in areas where the fattening scheme did not operate. Stock-rearers in the Toungo Block were without exception in favour of loans and credit, although they were rarely familiar with the exact conditions of the fattening scheme.

Stock-rearers were asked about the type of credit they would like to see available in their own area. Their response was almost invariably framed in terms of herd rebuilding; loans were requested for a period of between two and five years, so that they could buy calves in the market and fatten them up for sale.

Cattle prices on the national market in Nigeria have undergone considerable fluctuations in recent years, and the consequences of this do

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[1] There is some evidence that this 'cost' has increased over the last century, for early sources talk about the reward for two years work, being a single animal. Hopen (1958) mentions that in Gwandu in the late 1950's the reward was a bull for one year's work, but that at that rate, herders were complaining that it was more profitable to work for cash on farms. Since under normal circumstances a bull equivalent to the herder's reward is about 200 Naira at 1982 prices, if the value of the herder's work does not increase, it would be more profitable to simply work for cash and buy such a bull.

not seem to have been fully absorbed by the herdsmen. Their expectations concerning the repayment of longer-term loans tended to assume a stability of market conditions that may not exist any more. If herdsmen buy animals when the price is high, after a drought or a rinderpest epidemic, they may find that the price for the animals they must sell later in order to repay their loan is well below the price they originally paid. In view of recent market trends this possibility cannot be ignored.

Stock-raisers hardly ever raised the possibility of loans for the construction of dams, feeder roads or other types of infrastructure. This may have been due to the effect of the rinderpest and the stock losses it has engendered, but it was evident that such items were seen as the responsibility of the government. In view of this, it should be a priority to involve stock-raisers both financially and organizationally in planning and execution of infrastructure development. This is partly to ensure that any proposed construction would meet their needs, and partly because if they make no personal investment in the realization of a given project, they are unwilling to foster communal efforts towards its continuing success.

An example of this situation is the salt and potash licks on the Mambila Plateau. There are no natural licks on the Plateau, and in the nineteenth century, the natron trade from Lake Chad through Adamawa was one of the mainstays of commerce in the region. During the colonial period the Government began to supply salt and potash to the Mambila, and herders began to expect this. The supply system has now been interrupted. Under normal circumstances, herders would be expected to very soon have the capability to organise their own supply; now, however they are simply waiting renovated support, rather than mobilizing their own resources and initiatives.

5.2.2 Requests for Inputs.

Throughout the survey area, stock-rearers were asked what inputs and assistance they would like to see in their region. Answers to this

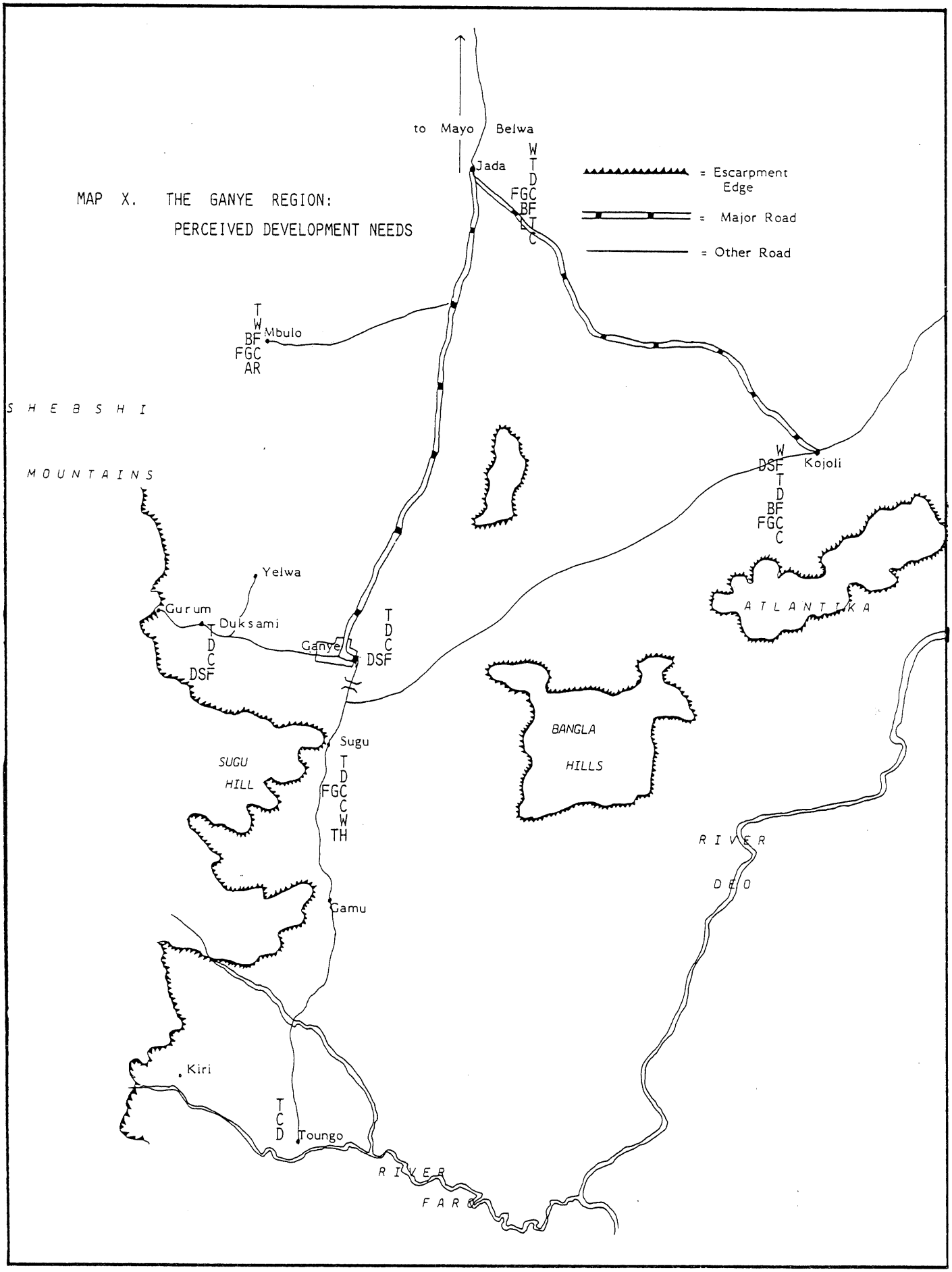
question were dominated by the rinderpest epidemic and its potentially disastrous effects, and in many places herdsmen asserted that, apart from the epidemic, they were content with the present situation. In a normal year herdsmen do experience problems, and these were elicited by more persistent questioning.

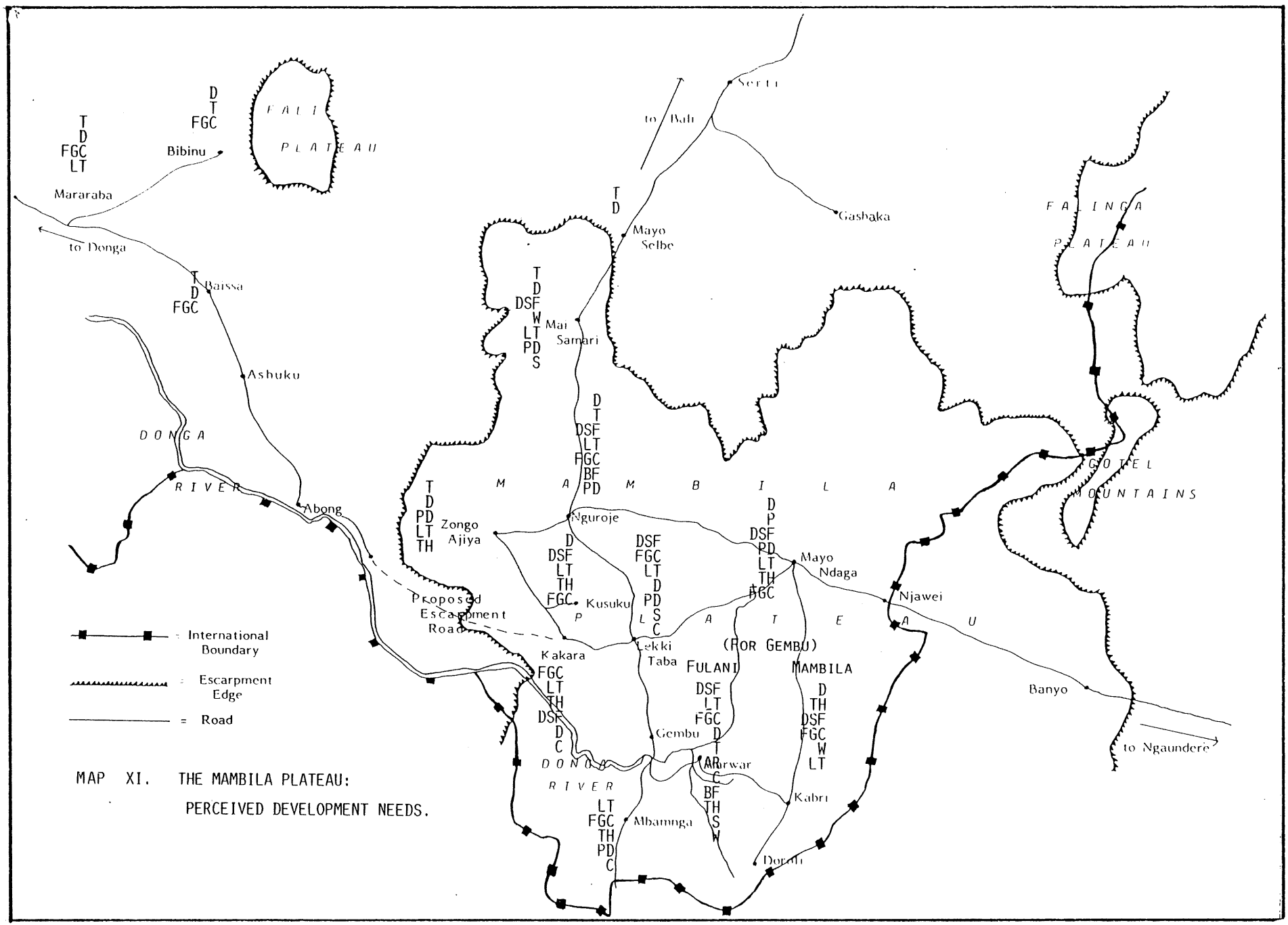
Maps X,XI,XII represent schematically the perceived development priorities for the towns and markets where interviews were conducted. It can be seen that these are closely linked to the ecological conditions in the areas in question. For example, tsetse becomes generally more urgent further south in the survey area. Water problems, by contrast, are largely confined to the extreme north of the block. Some topics, such as disease and credit schemes are sufficiently complex to require separate sections and are dealt with previously. Others are tabulated below with short notes.

a) Water. A shortage of actual water, as opposed to pasture, was mentioned as a problem only north of Ganye and on the Mambila Plateau. Herdsmen are aware that dams were in principle an answer to this problem, but they have been somewhat disappointed by the few dams that have been installed, since these have not been regularly maintained. Both Samba and Fulani feel that dams are complex engineering works that can only be installed by government agencies. None of the people we discussed this with seemed to think it would be possible to themselves construct and maintain an earth dam.

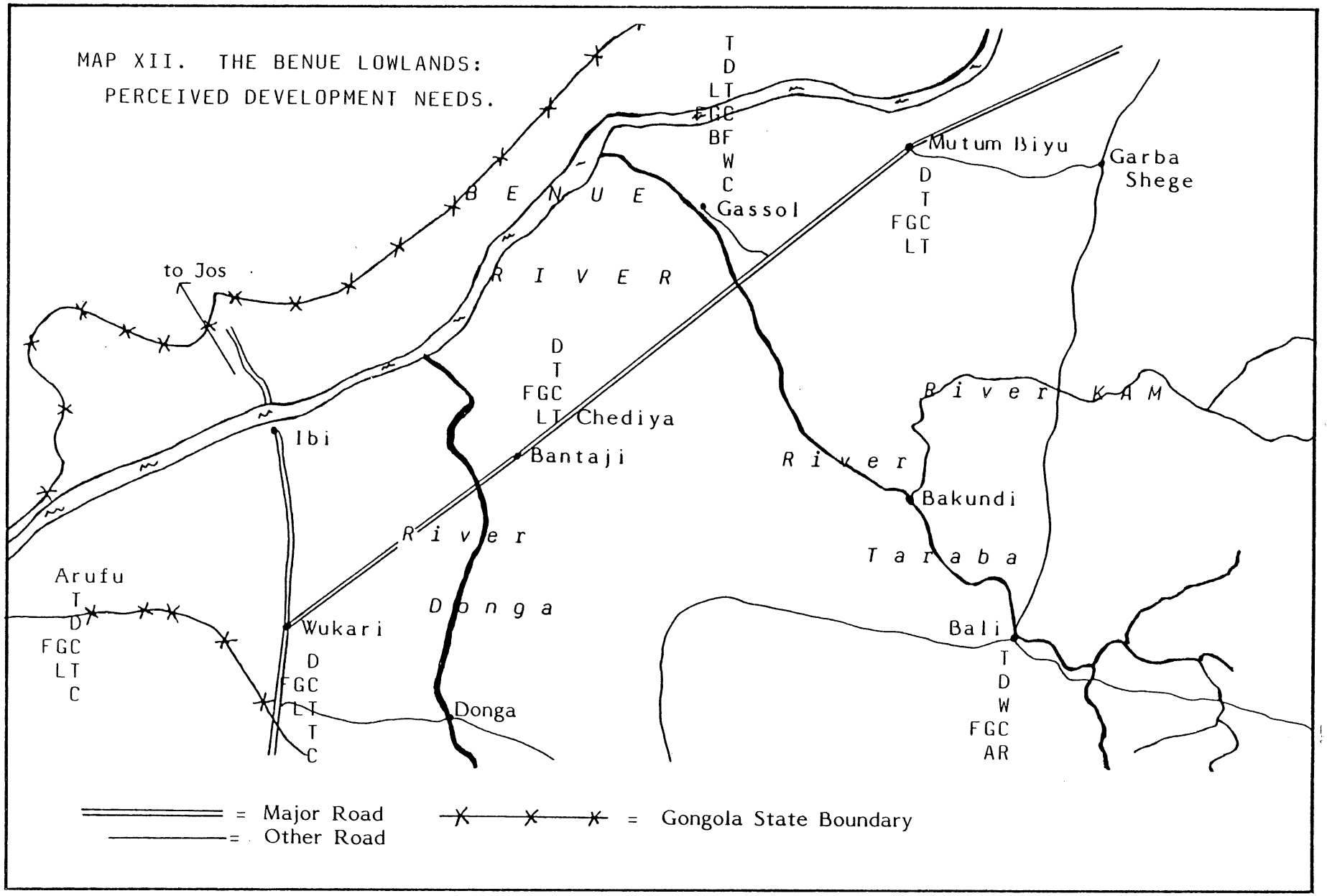
The result of increasing water reserves on the Mambila Plateau would be a potentially even higher stocking rate during the dry season, as it would allow herd-owners living near the dams to keep their herds at home instead of going on transhumance. In view of the present over-grazing over much of the Plateau, this seems undesirable.

b) Theft. Cattle theft is only a problem on the Mambila Plateau. It is an obvious danger in any area where stocking densities are high and an international frontier is nearby. According to stock-owners, some of the


MAP X. THE GANYE REGION:
PERCEIVED DEVELOPMENT NEEDS
to Mayo Belwa
Jada
W T D FGC BF T C
= Escarpment Edge
= Major Road
= Other Road
T W BF FGC AR
Mbulo
S H E B S H I
M O U N T A I N S
W DSF T D BF FGC C
Kojoli
Yelwa
Gurum
Duksami
T D C DSF
Ganye
T D C DSF
A T L A N T I K A
BANGLA HILLS
Sugu
SUGU HILL
T D FGC C W TH
R I V E R
D E O
Gamu
Kiri
T C D
Toungo
R I V E R
F A R



MAP XI. THE MAMBILA PLATEAU:
PERCEIVED DEVELOPMENT NEEDS.


MAP XII. THE BENUE LOWLANDS:
PERCEIVED DEVELOPMENT NEEDS.
T
D
LT
FGC
BF
W
C
B E N U E
R I V E R
Gassol
Mutum Biyu
Garba Shege
D
T
FGC
LT
to Jos
D
T
FGC
LT Chediya
Bantaji
Ibi
River KAM
River
Bakundi
Taraba
River
Donga
Arufu
T
D
FGC
LT
C
Wukari
D
FGC
LT
T
C
Donga
Bali
T
D
W
FGC
AR
= Major Road
= Other Road
= Gongola State Boundary

Key to Symbols used in Maps X,XI,XII -Perceived Development Needs.

AR = Access Roads

BF = Bush Fires

C = Credit

D = Disease, other than rinderpest and trypanosomiasis

DSF = Dry-season Fodder

FGC = Farmer/Grazier conflict

LT = Land Tenure

PD = Pasture Degradation, Erosion

S = Salt or Potash Licks

T = Tsetse fly

TH = Theft of stock

W = Water

stolen animals are trekked across the border into Cameroun and there sold to traders, while others are butchered and sold in the markets on the Plateau. Interviews revealed that there was a general correlation on the Plateau between southern location and a higher incidence of theft. This was attributed by local opinion to the greater intermingling of Fulani and Mambila populations, as the Donga river valley was approached. Theft was attributed to inter-ethnic animosity rather than commercial motives, although some Fulani were honest enough to admit that Fulani who had lost their herds themselves were major culprits.

The opinion of the police, who dealt with the majority of cases of reported theft, was that the large thefts were the work of experienced Fulani, who had the herding skills to move large bodies of animals without attracting attention, while single beast thefts might be attributable to Mambila. In some areas such as Mbamnga, a theft is reported to the local Ardo at least once a week. Several stock-raisers reported a regular loss of their animals. The recovery rate for such thefts is low, because once an animal has been slaughtered, proof of ownership is difficult.

At present there is no system of ear-tagging to mark individual ownership, although some **lenyol** cut the ears of cattle to indicate that their owner was a member of that clan. A system of branding, such as is used by Twareg and Fulani in Niger, was suggested to herdsmen at a series of public meetings. After the ramifications of such a system were explained, most of the herders were in favour of such a scheme. Branding could be administered locally at minimal cost, and regional cattle-brands could be publicly advertised through posters.

A version of a tagging system is used in the Ganye area at Sallah time, when the number of sheep in the town increases. Some owners stain the sheep's wool in bright colours, in order to signify their ownership.

c) Grazing Reserves. Grazing reserves have been established in name throughout much of southern Gongola State. Despite the allocation and gazetting of these areas, few herd-owners seemed to understand clearly the

conception or potential advantages of such reserves. None of the stock-owners interviewed asked spontaneously about their establishment. This is not because graziers are not pressed for land; both on Mambila and in the Benue valley, there is a strong desire for an inalienable territory. But unless grazing reserves are established with considerable infrastructure, such as year-round water, disease control systems and supplementary feed supplies, herdsmen will not treat them as an exclusive area, but only as a convenient refuge for certain times of the year.

Opinion was divided on whether agriculture should be allowed in grazing reserves. In those areas where most Fulani were transhumant and farmed as part of their household economy, agriculture was approved, while among nomads, such as those interviewed in Mararaba and Bibinu, it was thought that it should be prohibited.

Another difficult problem was the allocation of collective responsibility. Dams put in by the government are not generally maintained by the local community, even when it is in their interest to do so. This is because they perceive such maintenance as a government responsibility. If an outside agency were to put in dams and ramps in a Reserve without demanding financial involvement from the Fulani, then it seems likely that they would suffer similar neglect.

One of the problems of grazing reserves that was raised by herdsmen was the control of access. A Grazing Reserve with a restricted infrastructure is only valuable to local stock-owners if only a limited number use it during a given period. For example, the spraying of an area against tsetse fly rapidly becomes widely known to the nomadic community, and soon attracts excessive numbers of cattle. Similarly, the presence of a dam with uncontrolled access could lead to rapid pasture degradation and erosion. A necessary preliminary to the establishment of a Grazing Reserve would have to be the clear assignation of rights to a restricted number of individuals, and the promotion of practical measures to ensure the protection of those rights.

It should be mentioned that where the local farming population is aware of the significance and purpose of grazing reserves, it is almost united in opposition to them, as it poses a threat to their expansion on to new land. The establishment of reserves should thus be planned in consultation with local agricultural populations otherwise they will meet with local opposition.

d) Certificates of Occupancy. In Gongola State, two types of Certificate of Occupancy (C of O) are available. One type is issued by Local Government, and is of uncertain legal validity. Such certificates were traditionally issued by means of a long and elaborate process of consultation with elders and local officials, and resulted in the right to fence off a particular area, and sell it if necessary. More recently, Local Governments are reported to be issuing these certificates without going through the process of consultation; in the process, they sometimes abrogate their own previously-issued certificates. On Mambila, where pressure on land is high, such certificates have recently been issued for traditionally 'owned' land. Needless to say, the graziers who had traditional rights on such land are exremely bitter.

The second type of C of O is that issued by the State Government, after the passage of an act in the State House of Assembly. This is a long and complex process and was regarded by most stock-rearers as a luxury that only the rich could afford. We encountered few stock-owners who had such C of O's and they were indeed notably wealthy.

If the process for obtaining a C of O at either State or Local Government level could be made simpler, cheaper and more equitable then this would improve the situation for transhumant pastoralists throughout the Toungo Block. In the meantime, however, in view of the framing of Nigerian law, a practical step would be to encourage herders to lay claims to their grazing land by the planting of economic trees. This would give them a case against anyone who occupied their land while they were away on transhumance. It might also encourage them to establish more permanent

residences. If this were combined with self-help schemes to put in dams and feeder roads, the goal of settling nomads might thereby be partly achieved.

e) Salt and Potash. In parts of the Toungo Block where salt is not available naturally, potash and salt used to be imported by caravans from the sources in Bornu. Mambila is the largest area that is lacking in salt. In colonial times the authorities began to provide **kombowal**, troughs containing salt for the use of herd-owners. This continued until recently, but has now ceased. Herd-owners complained about this, as they perceive it is the responsibility of government to provide such materials. Therefore, a livestock agency or private institution should consider making salt and potash available all-year-round on the Mambila Plateau, in view of its limited accessibility, and reported demand.

f) Dry-Season Fodder. The provision of fodder in the dry season has two functions; to prevent major weight loss and consequent morbidity in herds, and to avoid the necessity for transhumance. Although Hausa farmers elsewhere in Nigeria regularly prepare fodder for sheep and goats from crop residues, fodder for cattle is regarded by most stock-rearers as an alien concept. Only in the Ganye district do the Samba farmers use cereal stalk residues to make fodder to feed the cattle in the dry season so that they can be retained in the area of their permanent residence. From the point of view of the Fulani herdsman, the provision of such fodder is associated with the low status of agricultural labour. To prepare sufficient fodder for the large herds that presently migrate would be a lengthy task, without any guarantee that the resultant decreased stock morbidity would compensate for the labour. Only when the risks are high, as they are on Mambila, where pressure on grazing resources is intense, would herd-owners consider this possibility.

In 1981, the Mambila Local Government purchased and made available to livestock-owners several thousand bags of feed for the dry season. These were enthusiastically purchased, and now many herd-owners regretted that they are no longer available. However, the bags were sold at a highly

subsidised price, seven Naira per bag, and this gave them an unrealistic impression of the true costs of supplying such feed.

At present there has been little research and no successful development of dry-season forage crops such as Stylosanthes on the Plateau. In view of the difficult situation for graziers, an innovation of this type would probably meet with a more enthusiastic reception than elsewhere.

5.2.3 The Settlement of Stock-Rearers.

5.2.3.1 Federal Policy.

Federal Policy, referred to in the introduction, has been towards the settlement of nomads. This policy has two main advantages; nomads are difficult to control, in that they cross national boundaries beyond the cognizance of border authorities, and they are difficult to tax, despite the great wealth they control. Moreover, despite their herds, they contribute only a small proportion of the national supply of beef.

5.2.3.2 Historical Strategies.

Although many nomadic herdsmen have become sedentary throughout West Africa at various historical periods, examples of successful settlement are limited. Nomadic herdsmen who exercise an option to sedentarize seem to do so for two reasons; either drought, disease or banditry so decimate a herd that their owner has to farm merely in order to survive, or else conditions are so good for the stock, that the need to be constantly on the move in search of new pastures is obviated.

Where Fulani have chosen to settle, they have often proved very successful as mixed farmers, often because their capital, represented by cattle, gives them an initial advantage over an arable farmer. Such wealth allows the Fulani to take advantage of newly available inputs, such as fertilizer.

5.2.4 Information.

5.2.4.1 General.

One of the principal elements in any development planning must be an understanding of the methods of making information about development inputs available to those whom the project is intended to help. In view of the widespread misinformation on most topics relevant to livestock development; -disease, land tenure, credit schemes etc., it seems that this problem should be given more attention.

5.2.4.2 Language.

The most important language in Southern Gongola state is Fulfulde, since it is spoken both by the Fulani, who constitute the majority of cattle owners, and is also a widespread lingua franca in the Mambila and Samba areas. Although spoken by the herders in the Benue lowlands, it is not used by other people there. Fulfulde is not a unitary language, but is divided into a large number of dialects. The dialect spoken by the herders is different from the Hausa-influenced Fulfulde spoken in Yola and other towns. This urban speech is associated with external authority by the nomadic groups, and information disseminated in this dialect risks being dismissed because of its associations. Any form of media in Fulfulde should ideally be prepared in both urban and nomadic dialects.

The second most important language is Hausa. It has only recently begun to compete with Fulfulde as a lingua franca in Southern Adamawa, perhaps because of the influence of the radio, and the improved communications networks leading to an influx of Hausa traders. At present, Hausa is understood by government officials and traders, as well as many semi-settled Fulani. However, it is not spoken by many nomadic herdsmen, nor is it used much on the Mambila Plateau. Although it is used as a lingua franca in the Benue lowlands, neither the Jukun nor the Tiv people are particularly receptive to media material in Hausa.

English is confined to government officials, throughout most of the survey area, and although valuable as a national medium of communication, is not understood by the majority of those a development project would be planned to reach. It remains to be seen whether Universal Primary Education will create a new generation of schoolchildren literate in English.

Literacy programmes have begun in Jibu, Mambila, Jukun, and Tiv, but only among the Tiv is the written language a substantial medium of communication. Radio broadcasts in this area are confined to English,Hausa, Fulfulde,Tiv and Jukun.

5.2.4.3 Media

It is frequently argued that the most direct impact is made by visual media, either films or television. There are, however, logistical difficulties in reaching a large number of potential recipients of development in this way. Moreover, a problem with films is that they cannot be referred back to, in situations of doubt or confusion.

Written material would seem to be an alternative to this, and there is no doubt that simply presented material in English, Hausa and Fulfulde would certainly be used by a minority of livestock-raisers. However, written material does not always carry the same cultural values it does for farmers and herders as for harassed development officials. Pamphlets may well be carried about and shown to large numbers of interested people, but not actually read and absorbed.

Media that actually depend on speech seem to be the most significant option, because they resemble most closely traditional modes of transmission of information; i.e. word-of-mouth. Two methods are obvious, the radio and teaching cassettes. During the course of the survey, sufficient anecdotal material was collected to suggest that people are very attentive to the radio whenever anything of importance to them is broadcast. Radio-cassette tape-recorders are widespread, and distributing

duplicated cassettes would be relatively easy.

5.2.4.4 Traditional Co-operative Associations.

When considering how to persuade people to adopt innovations, sufficient consideration is seldom given to authority structures within the society. In hierarchical societies, innovation seldom succeeds unless it has the implicit or explicit approval of the rulers. In acephalous societies, controlled by associations, such as the Samba, the approval of those in charge of the societies is crucial to acceptance. In societies where even associations have limited power, such as the Tiv, innovation will be adopted in terms of an individual's immediate economic advantage.

In the case of the Fulani,there is no doubt that individual herdsmen take the authority of their Ardo seriously, and his opinions are important in making decisions about herding strategies, and reactions to political change.

Among the Samba, there are chiefs, whose position is important, but the economic sinews of the society are the associations, such as the Women's Fellowship and the Chamba Cultural Development Association. These groups mobilise collective labour for agriculture and work on the roads, and funds that are to be are channeled to this area could be disbursed directly to such groups.

SECTION VI.

RECOMMENDATIONS FOR FUTURE WORK.

6.1 Topographical Research.

As a result of restrictions of time and difficulties of access during the rainy season, some places in southern Gongola State were not visited. Further work is needed, to concentrate on reaching these areas and talking with stock-rearers. The high proportion of sedentarized Fulani in the survey area suggests that seasonal repetition of these meetings in the same towns would be fruitless. However, wherever preliminary discussions indicated that the wet season populations would be substantially different, further meetings should be held. Poor roads on the Mambila Plateau meant that the region south of the Donga river was covered only sketchily. Further journeys should be made to Warwar, Dorofi and Kabri. The lowlands east of the broken bridge at Manya, where there is reportedly a high Fulani population, was not visited, nor the Takalafiya area north of Suntai-Bakundi. Throughout the whole of the eastern Benue lowlands, towns such as Bali, Bakundi and Bantaji were reported to have had an increased wet season population during 1983 compared to 'normal' years; this assertion needs verification. Two high-altitude grasslands, the Kiri and the Fali plateaux, where cattle populations were reportedly high and stock-raising conditions favourable should also be visited.

6.2 Economic and Social Topics.

Some questions raised by the results of wet season work would clearly bear more detailed research. These are;

a) The extent of tsetse throughout this area remains problematic, yet an accurate knowledge would be an essential prerequisite to a livestock development project. The uncertain quality of the existing maps and the availablity of trained tsetse survey personnel means that valuable new

information might be gained in the course of a more general guided tour of the area. Throughout the Toungo Block, control of re-infestation remains a considerable problem.

b) A more detailed examination of the livestock-management practices of non-Fulani would be useful. Some Mambila and Samba farmers who owned cattle were interviewed, but clearly, more detailed budgetary data would clarify the position of cattle in an essentially agricultural household economy. Nothing is yet known about the extent or modes of production of Ndoro or Jibu cattle-owners. Some of the other agricultural peoples in this area, about whom only fragmentary ethnographic material is available, should be briefly visited to assess the types of livestock they own, and the extent of their participation in the national economy.

c) The existing relations between the Fulani and agricultural communities (**RIM**,1983c) could form an important component of a livestock development project, yet little hard data is available concerning concerning the economic aspect of these relations. More data about Fulani-Tiv and Fulani-Kuteb relations, which are reported to be respectively poor and excellent, would also be useful.

e) Herd composition is one of the most controversial aspects of Fulani livestock management. Informants' statements concerning the Mambila Plateau suggest that the larger the herd the greater the tendency to retain unproductive animals. This should be confirmed or refuted by numerical data, and comparative figures for non-Fulani livestock owners made available.

f) The expansion of Tiv farmers, opening up new areas of bush, is one of the factors that dominates the economy of the Benue lowlands. Unpublished material at the Catholic Mission in Bali makes it possible to reconstruct this process in detail. This data should be collated together with an assessment of Tiv household economy and the potential for yam and pig production weighed against the use of the land for cattle-grazing.

Now that farmers have the option of increasing their cash incomes

by supplying both cereals and livestock for the national economy, a more concrete analysis of their strategies would assist the analysis of the acceptance of innovative development inputs. In some areas, it is clear that tin-roofs, motor-bikes and radios are the initial purchases of farmers with surplus cash to invest, whereas elsewhere it may be that cattle are a significant option.

g) The specific requirements of the LPU models should be put to stock-rearers on a regional basis to determine local reaction to their implementation.

h) In some areas of the Toungo Block, legal and customary land tenure is a controversial issue. In view of the importance attached to C of O, and of the graziers to permanent rights in land, a more detailed examination of land tenure would create a useful body of data. This could be combined with an examination of court records concerning conflict over land, in areas where such disputes are common.

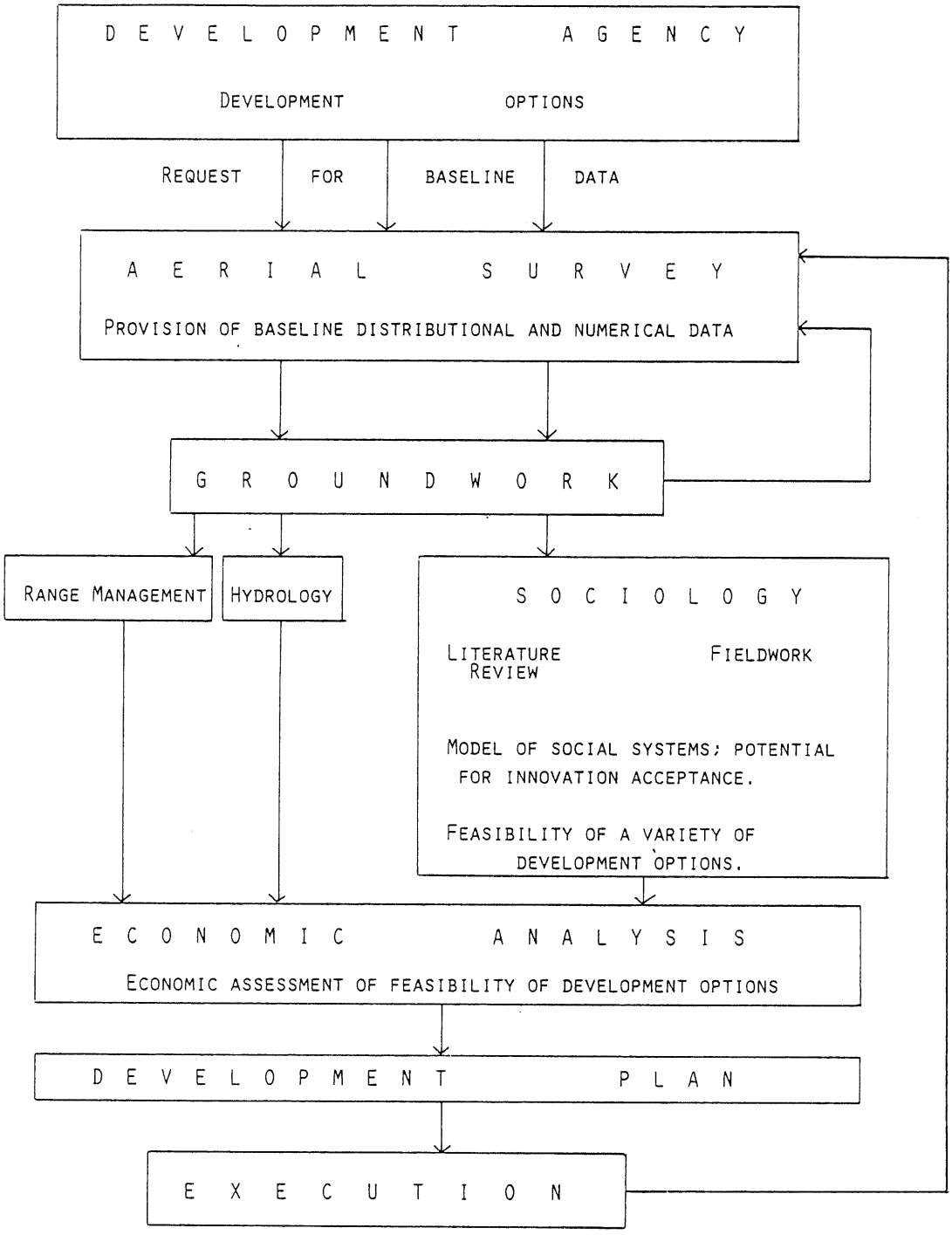
SECTION VII.

A GENERAL MODEL FOR THE INVESTIGATION OF TRADITIONAL LIVESTOCK PRODUCTION SYSTEMS.

Figure II presents a general model for the investigation of livestock production systems, showing how aerial survey and groundwork can be integrated to produce an overview of livestock and land use. Their results are then subjected to an economic analysis, so that the commissioning agency has available economic feasibility data on a complete range of development options. At every stage feedback between the researchers in the different disciplines can help modify the methods and conclusions of one another.

FIGURE II

A GENERAL MODEL FOR THE INVESTIGATION OF LIVESTOCK PRODUCTION SYSTEMS.



SECTION VIII

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[I am most grateful to Ann Waters-Beyer, ILCA, Kaduna and Mark Duffill, ATC, Kano,for making available to me a number of references and unpublished sources that have been used in compiling this report.]

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APPENDICES.

Appendix I.

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In addition, we would like to express our gratitude to those Local Government Officials, District Heads and Village Heads who extended all possible assistance, and to the multitude of stock-owners who endured our questioning. We express our gratitude to all of them and hope that our combined efforts have not been in vain.

Appendix II.

RECORDED INTERVIEWS.

This is a list of all the interviews recorded by the RIM team during the course of groundwork August-October, 1983. The original tapes are lodged in the RIM Archive, and copies could be made available to LPU. Interviews were only recorded with the express permission of the informants, and for this reason, a number of interviews were not taped. Complete details of those interviewed, are given in Appendix III.

Interview	Date	Place	People Interviewed.
I	1/9/83	Ganye	Alh. Y.A.Ganye Alh. A.T.Jalingo
II	1/9/83	Sugu	The District Head and local stock-raisers.
III	2/9/83	Toungo	The District Head and local stock-raisers.
IV	5/9/83	Jada	The chief of Jada and local stock-raisers.
V	6/9/83	Ganye	Alh. G.M.Surandi
VI	6/9/83	Duksami	The District Head and local stock-raisers.
VII	6/9/83	Duksami	Ardo of Guram
VIII	6/9/83	Duksami	Alh. Y.Gangwon

IX	6/9/83	Duksami	N.B.Sanjo
X	7/9/83	Mbulo	The District Head and local stock-raisers.
XI	8/9/83	Sugu	Amadu Sugu
XII	11/9/83	Kojoli	District Head and local stock-raisers.
XIII	14/9/83	Bali	Sarkin Shanu
XIV	19/9/83	Gembu	Alh. B.Malabu
XV	20/9/83	Gembu	Usman Ardo, Vet.Officer
XVI	21/9/83	Gembu	Ardo Gembu
XVII	21/9/83	Nguroje	Sarkin Nguroje and local stock-raisers.
XVIII	21/9/83	Gembu	Jauro Gembu and local stock-raisers.
XIX	21/9/83	Gembu	Secretary, Local Government
XX	22/9/83	Zongo Ajiya	Alh. Hiroyi and local stock-raisers.
XXI	22/9/83	Kakara	Jauro Kakara and local stock-raisers.

XXII	23/9/83	Lekki Taba	Jauro Lekki Taba and local stock-raisers.
XXIII	23/9/83	Mayo Ndaga	Alh. A.M.Unguwar and local stock-raisers
XXIV	24/9/83	Gembu	ArDo Gaji and local stock-raisers.
XXV	25/9/83	Kusuku	Musa Jauro Yaya and local stock-raisers.
XXVI	27/9/83	Mai Samari	ArDo Mohamadu and local stock-raisers.
XXVII	30/9/83	Mararaba	Sarkin Buba and local stock-raisers.
XXVIII	30/9/83	Bibinu	Lamido Gidado and local stock-raisers.
XXIX	4/10/83	Arufu	ArDo Nakanje and local stock-raisers.
XXX	5/10/83	Chediya	Alh. Adamu Kiri and local stock-raisers.
XXXI	5/10/83	Gassol	Umaru Hamayero local stock-raisers.

Appendix III.

Itinerary and Contacts during Wet Season Ground Survey

Date	Place	People Seen	Post or Occupation.
28/8	Bauchi-Yola		
29/8	Yola		
30/8	Yola Yola-Ganye	Dr.Adamu Zakari	Chief Livestock Officer, MAHFR
31/8	Ganye	Mr.Paul Mairiga Dr.Ibrahim Gurin Mr.Saidu Maiha	Principal Control Officer, FDPCS. Zonal Veterinary Officer, MAHFR Area Livestock Officer, MAHFR.
1/9	Ganye	Alh. Yusufu Aliyu Ganye Alh. Adama Taraba Jalingo	Leader of Settled Fulani Community in Ganye. Leader of Settled Fulani Community in Ganye.
	Sugu	Aliyu Shanaka Emmanuel Babale Amajam Anudebbo Mr. Salihu Ganumweso Sugu and fifty stock-	District Head. Village Head. Ardo of Sugu Fulani Samba student.

		rearers summoned from the market.	
2/9	Toungo	Alh. Ja'aimu Mohamudu Nanawa Plus ca. thirty stock-rearers.	District Head, formerly a Livestock Supervisor. Ardo of Toungo.
	Sugu	Ms. M. DeFinney	Teacher, WTC, Sugu.
	Ganye	Fr. Martin	Roman Catholic Priest.
3-4/9	Jangani. Climbed the Jangani Plateau, West of Sugu, to record patterns of stock-rearing in the high-altitude grasslands.		
5/9	Jada	Alh. Mukadas Tukur Ardo Adamu Jada Ardo Ho'odi Mayo Kelli Alh. Shanu Alh. Bala Ibrahim Mohamudu Naseru Plus ca. fifty stock-rearers.	Chief of Jada. Ardo of Jada Ardo of nomadic Fulani Cattle trader Cattle trader Cattle trader
		Mr. Chen	Manager of large private farm 10 km. North of Jada with 1000m. grass airstrip.

6/9	Ganye	Alh. Gure Mohamudu Surandi	Ardo of Ganye (formerly Lamido Kilba in Hong L.G.A.)
	Duksami	Abubakar Gambondi Yaro Gampe Adamu Gishilaambe Alh. Shaadu Dabo Laaminga Ngura Bello Sanjo Alh. Yusufu Gangwon Plus ca. 150 stock-rearers.	District Head of Yelwa Village Head of Duksami Village Head of Gurum Village Head of Tindoore Ardo for the Guram Plateau Fulani spokesman from Yelwa Samba spokesman
7/9	Mbulo	Dan Lawan Sanda Bello Adamu Sambo Alh. Umaru Plus ca. fifty stock-rearers.	District Head Village Head Ardo of Mbulo
8/9	Sugu	Isa Ja'amai Alh. Yaya Amadu Sugu	Ardo for the Jangani Plateau Ardo for Bakari Gusau Elder of Sugu.
9/9	Ganye	Mr.Paul Mairiga Mr. Clement Abba	Principal Control Officer, FDPCS Personnel Officer, Ministry of Education. Samba informant.
	Sugu	Mrs. Rachel Haruna	WTC, Sugu. Samba informant.

10/9	Ganye	Alh. Adamu Sanda	Chief of Ganye. Alh. Sanda was Livestock Supervisor in the Mambila-Gashaka area for many years.
	Tola	Alh. Dan Duma Ardumi Jayimu Gangwaso Plus ca. ten stock-rearers.	District Head Village Head
11/9	Kojoli	Alh. Hayalu Usman Kojoli Alh. Amadu Bello Plus fifteen local stock-rearers.	District Head Ardo of Kojoli area.
	Mapeo	Fr. Declan	Roman Catholic Priest
12/9	Yola	Dr. Iain Colquhoun	STO, LPU
13/9	Bali	Fr. Adrian Edwards Fr. Terry Casey	Roman Catholic Priests
14/9	Bali	Dr. Mohamed Danjuma Aliyu Mr. Aliyu Yahaya Jibril Bayero	Veterinary Officer Livestock Officer Sarkin Bali (newly appointed)

		Abubakar Haman	Sarkin Shanu
15/9	Serti	Mr. Stephen Gawaisa	Wildlife Officer, Gashaka Game Reserve.
	Mayo Selbe	Mr. Haggai Shuaihu Yerima Ardo Musa Mallam Baba Fika Plus ten local stock-rearers.	Vet. Supeintendent. Sarkin Ndoro Ardo for Mayo Selbe Ministry of Works
16/9	Tungan Amadu	Mrs. Dijatu	Informant on the role of Fulani women.
17/9	Gembu	Dr. Garba Bello	RTO,LPU
18/9	Gembu	Sallah celebrations.	
19/9	Gembu	Alh. Buba Malabu	Sarkin Shanu
20/9	Gembu	Usman Ardo Alh. Mohamudu Mansur	Outgoing Veterinary Officer Sarkin Gembu
21/9	Gembu	Umaru Gaji	Ardo of Gembu

	Nguroje	Ardo Sambo Alh. Bashiru Alh. Bana Plus ca. forty stock-rearers.	Sarkin Nguroje Mai Unguwar
	Gembu	Mohamudu Jugari Gembu Plus ca. twenty stock-rearers	Jauro Gembu(Mambila)
		Also discussions with Local Government Secretary	
22/9	Zongo Ajiya	Alh. Hiroyi Plus ca. 150 stock-rearers. Ardo Gaji and Jauro Tukur not present.	Wakili
	Kakara	Bala Kaigamma Plus six stock-owners.	Jauro Kakara
23/9	Lekki Taba	Idia Kondoshi Plus fifteen stock-owners.	Jauro Lekki Taba
	Mayo Ndaga	Alh. Adamu Mai Unguwar. Plus ca. thirty	Wakili. [The Jauro of Mayo Ndaga had recently died.]

		stock-owners.	
24/9	Gembu	Further discussions with Ardo Gaji and Alh. Malabu and ca. ten of the wealthier stock-owners.	
25/9	Kusuku	Musa Jauro Yaya Plus ca. thirty stock-owners. Ardos Gori and Maji not present.	Sarkin Wakili
	Mbamnga	Ardo Also (sic) Ardo Jibo Ardo Buba Ardo Buba Ardo Sale Plus ca. sixty stock-owners.	Ardo Mbamnga Ardo Bing Ardo Bang Ardo Bom Ardo Ba'a
26/9	Gembu	Dr. Umaru Bakai Alh. K.M. Batu Dr. Charles	Project supervisor, UBRBDA. DPO, Nigerian Police. New Veterinary Officer
27/9	Mai Samari	Ardo Mohamudu Ardo Alim Hainari Plus ca. sixty	Ardo of Mai Samari

		stock-owners Jauro Bakido Bakari and Ardo Damino of Belel not present.	
28/9	Mai Samari-Serti		Descent of Escarpment
29/9	Mararaba	Bulus Ali Amadu and Umaru	Rural Development Project Manager, S.U.M. Cattle-buyers.
30/9	Mararaba	Sarkin Buba Ardo Alh. Tarkoori Ardo Mai Dabo Ardo Bature Plus ca. forty stock-rearers.	Sarkin Mararaba Ardos of the groups of nomadic Fulani encamped near Mararaba
	Bibinu	Lamido Gidado Ardo Tumba Plus ca. fifty stock-rearers.	Ardo of **bodeeji** herders. Ardo of **daneeji** herders.
1/10	Baissa	David Eckersley Donald Twani Norman Viss	VSO, GSS Baissa. Higher Livestock Superintendent Agricultural Extension Officer, CRCN

2/10	Sabon Gida	Cattle traders	Several groups of cattle-traders trekking herds along this road were interviewed.
		Case van Wyk	Agricultural extension officer, CRCN CRCN, with special responsibility for the Fulani.
3/10	Donga	Usman Nungala	Agricultural extension officer,CRCN
	Wukari	Ruth Veltcamp	Secretary, Fulani Board, CRCN.
4/10	Arufu	Ardo Nakanje Gazari Tonga Plus ca. fifteen stock-rearers.	Ardo Arufu Spokesman
5/10	Bantaji	Abubakar Gambo Ali	Sarkin Shanu
	Chediya	Ardo Alh. Adamu Kiri Lamido Bantaji	Ardo of Gassol.[The Ardo of Chediya had recently died]. District Head.
	Gassol	Umaru Hamayero	Spokesman.[The Ardo of Gassol was in Chediya].
6/10	Mutum Biyu	Alh. Maji	Sarkin Shanu

		Suleman Kasala	Hakimi Mutum Biyu
7/10	Wukari-Katsena Ala	Cattle-traders in the market at Katsena Ala.	