

MALLAM DENDO

**DFID**

# **NATURAL RESOURCE CONFLICTS IN NORTH-CENTRAL NIGERIA**

*Thus we pursued our path around a wide arc of that ghastly pool,  
Between the soggy marsh and the arid shore*

Dante Alighieri, *Il Inferno*

## **A HANDBOOK AND CASE STUDIES**



Roger Blench  
Mallam Dendo  
8, Guest Road  
Cambridge CB1 2AL  
United Kingdom  
Voice/Answerphone/Fax. 0044-(0)1223-560687  
E-mail [R.Blench@odi.org.uk](mailto:R.Blench@odi.org.uk)

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## ACRONYMS

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ADP	Agricultural Development Project
CBNP	Chad Basin National Park
CBO	Community Based Organisation
CPR	Common Property (or Pool) Resource
DFID	(United Kingdom) Department For International Development
FEPA	Federal Environmental Protection Agency
FGN	Federal Government of Nigeria
FMARD	Federal Ministry of Agriculture and Rural Development
FME	Federal Ministry of Environment
FMMP	Federal Ministry of Mines and Power
FMW	Federal Ministry of Works
FMWR	Federal Ministry of Water Resources
FUA	Fadama Users Association
HJRBDA	Hadejia Jama'are River Basin Development Authority
HNW	Hadejia-Nguru wetlands
HNWCP	Hadejia-Nguru wetlands Conservation Project
IUCN	World Conservation Union
JARDA	Jigawa Agricultural and Rural Development Authority (= ADP)
JEWEL	Jigawa Enhancement of Wetlands Livelihoods Project
JiSEPA	Jigawa State Environmental Protection Agency
KNARDA	Kano Agricultural and Rural Development Authority
LCBC	Lake Chad Basin Commission
LDP	Local Development Plan
LG	Local Government
LGA	Local Government Authority
MACBAN	Miyetti Allah Cattle Breeders Association of Nigeria
NEAZDP	North East Arid Zone Development Project
NFDP II	National Fadama Development Project II
NGO	Non-Governmental Organisation
NLPD	National Livestock Project Division
NPB	National Parks (Service) Board
NPC	National Planning Commission
PA	Protected Area
PCU	Projects Coordinating Unit
PIMU	Policy Implementation and Monitoring Unit
RAMSAR	The name of a place in Iran where the Wetlands Convention was signed
RBDA	River Basin Development Authority
RUP	Resource Use Plan
SEPA	State Environmental Protection Agency
SG	State Government
SMARD	State Ministry of Agriculture and Rural Development
SME	State Ministry of Environment
SMWR	State Ministry of Water Resources
SWB	State Water Board
UNDP	United Nations Development Programme
UNICEF	United Nations Children's (Education) Fund
USAID	United States Agency for International Development
WB	World Bank
WIA	Women in Agriculture
WUA	Water Users Association

**Glossary**

Ardo	Traditional leader of Fulbe community
Bulama	traditional ruler in areas within the former Kanuri kingdom
Galadima	Traditional leader
Lawal	District Head
<i>leyyi</i>	plural of <i>lenyol</i> the clan grouping of Fulbe herders
<i>ruga</i>	grass-built homestead made by Fulbe herders
<i>tudu</i>	upland

**CURRENCY**

As of April 2004;

1 US\$	=	146 Naira (₦)
1 Euro	=	180 Naira (₦)
1 UK £	=	252 Naira (₦)

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Patricia Daniel (PD)	International Social Development Consultant, CIDT, University of Wolverhampton, Walsall Campus, Walsall. WS1 3BD UK. <a href="mailto:P.Daniel@wlv.ac.uk">P.Daniel@wlv.ac.uk</a> +44 (0)1902 323019
Umaru Hassan (UH)	NLPD, No. 9, Yakubu Gowon Way, Kaduna. umaru_hassan@yahoo.com
Dr M Naser Musa (MN)	National Consultant, Jigawa MANR
Hadiza Giwa (Mrs) (HG)	Team member, JARDA Jigawa
M Tafida Hussein (TH)	Team member, EPA Jigawa
Abdullahi Ardo	Nomadic Education, Jos, Plateau State

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Biographical Note: Roger Blench is a self-employed consultant managing a limited company, Mallam Dendo, specialising in socio-economic aspects of the environment and rural development in Africa, Asia and South-Central America. He was a Research Fellow of the Rural Policy and Environment Group at the Overseas Development Institute 1996-2002.

## PREFACE

West Africa in general and Nigeria in particular has experienced a considerable increase in natural resource conflict since the beginnings of the 1990s. An area that has been of particular concern are clashes between farmers and pastoralists, especially in wetland areas. This has come about because the full potential of wetland areas has begun to be realised in terms of food production and their more effective exploitation has been the objective of several donor projects from the 1980s onwards.

As a consequence, there has been considerable interest in the issue of conflict, both because civil conflict retards development and because its causes and origins are largely unknown. The likely impact on proposed new development projects is clearly highly significant. As a consequence, there have been a number of missions, studies and workshops to address the issues. Not all of these have been productive; indeed by simply reprising old literature of preconceived ideas, some are actively unhelpful.

Some studies, however, have been based on up-to-date fieldwork and the results are available in a series of unpublished reports. The present book and CD-Rom is intended to give an overview of recent findings in the area of natural resource conflict in North-Central Nigeria and to suggest practical means of approaching field situations. The structure of the book and CD-Rom is as follows; the first part is a handbook or guide, addressed to anyone who is interested in methods of analysing conflict within the context of development projects. It was created within the context of Nigeria, but should have a more general relevance for other regions of West Africa. The second part is a general introduction to resource conflict issues in Africa with a particular focus on the Nigerian situation and on wetlands. The third part consists of case study material, gathered generally in the course of 2003 but incorporating some older material from the National Livestock Survey (1989-1992).

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Roger Blench  
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### SUMMARY

Two types of conflict are of particular concern in African development, socio-political conflict and natural resource conflict. Large-scale conflicts are of a different order of magnitude and call for appropriate responses. Local political conflict is both common and widely reported, in part because it generally takes place in urban areas and is visible to the media. Natural resource conflict is more dispersed, usually occurring in inaccessible places and often going unreported. Overall, it is probably of no less economic significance than political, ethnic or religious conflict and may well be an important factor in the recurrent food crises that are characteristic of sub-Saharan Africa, since it deters those in rural areas from investing for increased production.

There are many potential parties in natural resource conflict, including farmers, pastoralists, fishermen and hunters. Increasingly these are also opposed to modern institutions created and protected by the state, such as national parks, biodiversity reserves and forestry zones. The agendas of such institutions are often very alien to cultures that have had open access grazing and hunting for millennia and are often driven by non-African bodies. Of all the conflicts that occur, the category that has received most attention is the conflict between pastoralists and farmers. Both are food producers and both compete for a similar resource, wetland areas, which contain some of the potentially most productive areas in sub-Saharan Africa.

Herder/farmer conflict has existed since the beginnings of agriculture, but in Africa the prevalence of tsetse and low settlement densities kept the incidence of clashes at a low frequency until the twentieth century. In West Africa, the introduction of cheap trypanocides and other veterinary drugs increased herd sizes to levels that compelled herders to seek pastures outside their traditional ecological range. At the same time, improved human health has increased overall population and thus pressure on arable land. Nonetheless, the persistence of slash and burn agriculture typical of much of semi-arid and subhumid West Africa allowed the two groups to co-exist, especially through the exchange of crop residues for manure. This book focuses on the situation in Nigeria, where high population densities and large urban centres have made this type of conflict particularly acute.

✘ The marked expansion of riverine and valley-bottom (*fadama*) cultivation in Nigeria since the 1980s has meant that pastoralists and farmers now compete very directly for access to wetland areas with a consequent increase in conflict. Although there is significant variability in social, economic, ecological parameters from one area to another, conflict is usually greatest where populations are most dense and competition for *fadama* land highest. The distribution of *fadama* cultivation is very uneven. Areas where there are abundant flood-plains, especially along the Benue river, are still relatively unexploited in terms of dry-season cultivation and most land is still in the hands of fishing and pastoral communities.

✘ The degree of conflict between different resource users ranges from insignificant to extremely tense, but conflict between pastoralists and farmers far outweighs all other types of resource conflict in frequency and importance. Other reports have highlighted conflict between different 'resource users' such as hunters, basket-weavers, fishermen and even brick-makers. The field studies indicate that these are all of extremely limited significance compared with herder-farmer conflicts. There may be ideological reasons for emphasising these conflicts and downplaying the issue of pastoralism.

✘ At the local level, there are essentially three ways conflicts are resolved;

- ❖ Traditional authorities (which exist in hierarchical relations) including pastoral organisations
- ❖ Police, courts and the army
- ❖ Local and State Government

Although there are NGOs concerned with conflict resolution, no evidence of their operations was encountered in the field. It is often said that Pastoral Organisations, such as Miyetti Allah, can play a role in

## Natural Resource Conflict in North-Central Nigeria: Summary

conflict mediation. However, their record in this area is very poor because they are in reality highly dispersed and their ability to lobby correspondingly limited.

✘ In North-Central Nigeria, traditional rulers undoubtedly play the most significant role in both managing conflict informally and arranging peace-making meetings when matters get out of hand. However, their power in the community is highly variable and in some areas they are opposed by youth groups, while elsewhere their power is being subverted by local government officials. Nonetheless, traditional rulers are more accountable and responsible than any other group encountered during the surveys, but they get little support from official channels, notably the state governments.

✘ Broadly speaking, in the extreme east of Nigeria, in Taraba and Borno states, the authority of traditional rulers is still respected and they are able to enforce resource-sharing agreements as well as those relating to CPRs, such as restraints on fisheries. In Gombe, Bauchi and Plateau states and towards the west in Kebbi, there is more and more distrust, in part driven by the growing power of local government. Increasing political control of LGs by representatives of farming populations has meant pressure both to invade land reserved for grazing and to exclude pastoralists from high-productivity areas. As a consequence, there are much higher levels of resource conflict, with marked increases in violence between seasonal migrant herders and resident farming populations.

✘ Existing mechanisms of conflict resolution work best when competition for land and water resources is at low levels, but some communities have developed impressive inter-community stratagems to reduce potential problems. There seems to be little correlation with other categories of social cleavage, for example, across the religious divide.

✘ Action by traditional rulers to work building trust between different stakeholder communities is also variable. Where task forces have been formed for co-operation, results have generally been good, although less so with long-distance migrants who are simply absent for consultation. But in some cases, matters have been allowed to deteriorate, and armed conflict is now an annual matter. Despite considerable discussion between donors and government on the issue of conflict, support to communities at the grass roots is virtually invisible because of the urban agenda of both Nigerian and donor institutions.

✘ Civil insecurity is at high levels in some areas. Banditry is common towards the Cameroun border, especially in Borno. The long-distance migrants, usually referred to as Udawa, have been well-armed since the mid-1990s and are willing to use violence to assure their grazing. Police and Army have been called in Gombe and Bauchi, which, though locally effective, has often acted simply to displace the problem. Government needs to consider a long-term solution in collaboration with the authorities in neighbouring countries.

✘ In some parts of Nigeria, disputes that begin with natural resource conflict over access to resources have become framed in religious terms, presumably to further the interests of urban politicians. Increasing availability of modern weapons has increased the intensity and violence of such disputes.

✘ In general, pasture and fisheries are in transition from open access to private ownership. A trend that is so far variable in its incidence is the sale of land. In many areas, *fadama* lands were originally considered to be of little value, and were therefore allocated freely to migrants who requested them. However, as resident populations learnt the value of riverine plots, the loans were abrogated and riverine land is now leased or sold. Upland areas, especially for grazing, were also allocated to pastoralists and again these have been withdrawn in some cases. In the Shani area of southwest Borno all land sales have been forbidden and this has had an important effect on reducing conflict.

✘ Women (and children) play an active part in *fadama* use in some regions and family / community livelihoods and are directly affected by conflict. Mechanisms need to be developed which enable women's voices to be heard, their specific needs to be addressed.

✘ Officials charged with agricultural extension often have limited knowledge of the situation on the ground and attitudes to farmers and pastoralists that are unlikely to produce convincing analyses of local situations: capacity-building at all levels is indicated as a priority

✘ There is an absence of descriptive literature on the current situation and much existing material is seriously out of date: this highlights the need for both case studies, systematic research and careful situation analysis to be carried out by key stakeholders in each state to underpin future planning.

✘ There are few if any trained sociologists or facilitators with command of key minority languages relevant to bringing together often opposed sections of the local community.

✘ There is considerable evidence for environmental degradation throughout this region, brought about by deforestation and inappropriate cultivation techniques. The major consequences for fadamas are;

- ❖ flooding, which results from rapid runoff of rainwater into rivers once trees have been lost
- ❖ water deficits, due to excessive takeoff and widening of the channel, causing high levels of evaporation
- ❖ soil loss due to collapses of the riverbank
- ❖ mineral leaching due to excessive runoff
- ❖ replacement of diverse grassland with monospecific weed flora
- ❖ biodiversity reduction due to degraded habitats

✘ There is no evidence that *fadama* users were given any significant environmental advice through the ADPs or any other government bodies and no indication that environmental issues will be taken seriously in the future by either donors or government. This institutional blindness will exacerbate food security problems and undoubtedly natural resource conflict related to them.

✘ The policy consequences may be summarised as follows;

- ❖ donors concerned with conflict need to rebalance their perceptions of the sources, causes, locations and economic consequences of conflict. In particular, widespread conflict in dispersed rural areas is probably more damaging both to individual security and wellbeing as well as to the national economy than urban conflicts, but it is much less visible.
- ❖ the conflict agenda has been very much subject to elite capture. Dominant groups are the interlocutors of donors and direct their attention away from significant issues. The needs of politically articulate urban dwellers are inevitably placed above those of rural producers and where this is a cause of conflict, such as in firewood or water extraction, regulatory frameworks and infrastructure will favour urban dwellers
- ❖ demographic growth and higher pressure on natural resources and the environment can only exacerbate the present situation. Government commitment to these issues is minimal and donors have a comparative advantage
- ❖ There is little or no evidence that the conventional peace-building remedies have had any impact in this area in part because they do not address the underlying causes of conflict. Indeed the standard 'mission' techniques for seeking information have clearly failed.
- ❖ The attention of donors, MLAs, NGOs and CBOs should be focused on describing conflict situations, analysing their underlying patterns and impressing on government at every level the importance of addressing these issues.

### Introduction: origins of the present document

Work on natural resource conflict in relation to Nigerian *fadama* areas began in 2002, when the present author was invited to review issues related to pastoralist/farmer conflict in Nigeria by DFID. This was to feed into the preparation of Fadama II, the second phase of the National *Fadama* Development Project, which has been under consideration since the first phase ended in 1999. Numerous workshops have been held to consider this issue, and the African Development Bank also commissioned a study in 2002, independently of DFID.

In January-February 2003, the Jigawa Enhanced Wetlands Livelihoods Project (JEWEL), a DFID-supported project based in Dutse and charged with developing improved conditions for the residents of the Hadejia-Nguru wetlands, held a training workshop to involve local stakeholders in the decision-making process. Associated with this was a limited amount of fieldwork which focussed on conflict in the wetland areas.

The World Bank Post-Conflict Fund (PCF) decided to follow up on this workshop by commissioning a three-state study, which would examine the issue of conflict in *fadama* areas in greater detail, using some of the same personnel as in the JEWEL Workshop. The original plan was to cover Kebbi, Imo and Plateau States sequentially, but in the event the outbreak of war with Iraq and insecurity due to the elections forced the team to curtail the mission with Imo nearly completed. In the event, the mission to Plateau State was only completed in June 2003.

As part of a follow-on from a mission in March-June 2003, the PCF decided to conduct further case studies particularly focusing on conflict in *fadama* areas of Nigeria with a view to preparing teaching material for training facilitators under Fadama II. The mission took place between October 24<sup>th</sup> and November 7<sup>th</sup> 2003. The team members throughout were Roger Blench (Consultant), Umaru Hassan (NLPD) and Musa Nasir (Jigawa State government). They were joined from 31/10/03 to the end of the mission by Sarah Lyons (Post-Conflict Fund, World Bank) and Bala Maisamari (3-6/11/03) from the Project Co-ordination Unit (PCU). The preliminary findings were presented to a meeting in Abuja on the 7<sup>th</sup> of November consisting of PCU staff and other donors and government officials concerned with conflict issues. From the case study material a handbook was prepared as background for the training of facilitators who will implement Fadama II, which began in Lokoja on 8<sup>th</sup> December 2003 and will continue through into 2004.

Apart from these materials, the present document also draws on a number of earlier studies. A preliminary comparison of pastoral/ farmer relations was undertaken in relation to the Toungo Block study, commissioned by the then LPU (now NLPD) in 1984. This was in preparation for the National Livestock Survey (1989-1992) for which the present author was ground co-ordinator. This resulted in a wide-ranging survey of pastoral conflict. Further information has been drawn from a series of studies conducted for ILCA (International Livestock Centre for Africa) which had a Kaduna office in the 1980s and 1990s.

Part I, the handbook, was prepared as a result of a joint request by the Post-Conflict Fund (PCF) of the World Bank and the Projects Co-ordination Unit (PCU) of the Federal Government of Nigeria. As training programmes were being developed for facilitators and other staff as part of the inception of NFDP-II it became clear that the lessons of the case studies would be more helpful if they were put into a user-friendly handbook. The handbook is intended to be dynamic, that is to change and be updated as additional lessons are learnt during National *Fadama* Development Project-II (NFDP-II).

## Natural Resource Conflict in North-Central Nigeria: Introduction

References of documents drawn upon in this synthesis;

Reference	Topic
Blench 1984a	Livestock Producers of Southern Gongola State
Blench, 1984b	Fulani relations with the Samba and Mambila
Blench, 1991a	Fulbe movement into Southwestern Adamawa
Blench, 1991b	The desiccation of Lake Chad in 1990
RIM 1992	National Livestock Survey
Blench, 1994	The Expansion and Adaptation of Fulbe Pastoralism
Blench, 1996	Pastoralists and National Borders in Nigeria
Blench 1998c	Resource conflict in semi-arid Africa
Blench, 1999c	Nigerian National Livestock Resource Survey
Blench 2003a	Access rights and conflict over common pool resources in the Hadejia-Nguru wetlands
Blench 2003b	Thinking about conflict: a handbook for facilitators in NFDPP-II
Blench, Daniel & Hassan 2003	Report on Fadama user conflicts in Kebbi, Imo and Plateau states.
Blench & Hassan 2003.	Report on Fadama user conflicts in Taraba, Borno, Gombe and Bauchi states.

The complete reference is to be found in the bibliography. Many other documents were consulted, but sections of those listed are actually incorporated into the present text, shortened and revised.

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## I. A guide to the analysis of natural resource conflict in North-Central Nigeria

Conflict over access to natural resources is common throughout Nigeria, especially now that the population is so large. Most conflicts are unnecessary in that they can be resolved if the groups in conflict wish to find a solution. There are some traditional institutions to settle disputes and resolve conflict, but they are facing unprecedented challenges and quite new types of issue. They therefore need support from outside, from government, NGOs and concerned individuals. The type of support depends on the problem itself and it has become clear that even the nature of the problem is not well understood.

### Photo 1. Hadejia-Nguru Wetlands

This handbook is about understanding and analysing problems. It is intended for everyone concerned with resolving conflicts over natural resources in West Africa, focusing particularly on issues concerning pastoralists. The first part is a handbook, and the second part is a series of case studies which can be consulted for examples of situations you may face in the field. The handbook contains suggestions as to how to proceed but this book does not promote some particular pre-packaged solution to conflict resolution.



Much of the conflict in Nigeria revolves around wetland areas or fadamas. One World Bank document defines fadamas as follows;

*Fadamas*, defined as flood plains and low-lying areas underlined by shallow aquifers. **Fadama resource users** are defined as **farmers, pastoralists, fisherfolk/fisherwomen, hunters, and others** who directly depend upon the natural resources of the *fadamas* for their livelihoods. *Fadama* resource users may also comprise private operators who provide complementary infrastructure and services for increasing productivity, storage, diversification and market access for *fadama* resource users.

Another way of thinking about this is that *fadamas* are ‘wetlands in drylands’. In the semi-arid and Sahelian areas, irrigation and other systems can make otherwise unusable land productive which gives the greatest economic gains to farmers.

*Fadama* is a Hausa word meaning a valley-bottom, flood-plain or a lowland around a river that floods or becomes wet when the river is high. *Fadamas* usually flood naturally but the term is also applied to areas where people have channelled or pumped water for their farms or other purposes. *Fadamas* tend to be areas of reeds, teeming with fish and bird-life. When the surrounding land is sandy or arid, the productivity of the land can often be very high. Such areas can also be very attractive to herders, because the grass is fresh and moist and provides good nutrition for animals. In the same way, fisherfolk (i.e. fishing people, fishermen) like *fadama* areas, as many species of fish choose reeds and river-grasses to breed and grow. In the past, many *fadama* areas had quite dense trees and shrubs along their edges and these acted to protect the banks and stop them falling away into the river. *Fadamas* are also important to wildlife, especially birds, because they provide food in the form of fish, snails and grubs.

When *fadamas* spread out over a large area, they are often called ‘wetlands’. In Nigeria, there are two important wetlands, the Hadejia-Nguru Wetlands and Lake Chad; there was formerly another one where Lake Kainji is today, but the Kainji dam has meant that it has virtually disappeared. Wetlands are recognised by an international convention, the RAMSAR convention (Ramsar is a place in Iran where the conventions was signed), as of worldwide significance, because of the biodiversity they support. Nigeria is a signatory to this convention.

### Historical background

In the past, many of the low-lying areas next to rivers in Nigeria were hardly used by farmers because of problems of disease, particularly malaria and river-blindness. As a result, they were mainly used for grazing by nomadic herders and by fisherfolk. Although they had no officially certified ownership of these lands, they regarded themselves as the owners by right of use. There has been small-scale riverside cultivation for centuries in Nigeria, mostly along the rivers in the far north, making use of the *shaduf*, a hand-operated water-lifter. But it was really the increase in human population in Nigeria during the twentieth century, that has driven a much greater use of wetlands for food production. During the colonial era, large irrigation schemes were popular, but these were never very successful, and it became clear to both the government and donors that it would be more effective to support traditional small-scale producers. In the 1970s, the first small petrol pumps began to appear in the markets, either distributed by the ADPs or bought on the open market. The 1990s in Nigeria saw a massive expansion of pump-based *fadama* cultivation throughout the northern half of the country. This coincided with large-scale urbanisation and a growing demand for horticultural products in all regions. This was the era of Fadama I, which spread various types of dry season cultivation in many states.

### Who are the people who use *fadamas*?

Different people use the *fadamas* and you need to understand who they are and how they use the *fadamas*.

#### Farmers

Farmers are of many ethnic groups but traditionally the best *fadama* farmers are the Hausa from Sokoto and Kano. Many other ethnic groups say they learnt *fadama* cultivation from the Hausa and they are still widely considered the most skilled horticulturalists. Very often they are not the indigenes of the area where they farm and they must hire or lease the land they work. But today, many other ethnic groups who formerly only farmed the upland areas are becoming expert *fadama* cultivators.

#### Herders

Farmers often keep their own livestock, especially in areas where they use cattle to pull ploughs. But most of the livestock in Nigeria is kept by herders or pastoralists belonging to particular ethnic groups. The most well-known are the Fulani, but there are also Shuwa, Uled Suleiman and Koyam in the Northeast. These are often referred to as 'nomads' in Nigeria, but in fact many of them have permanent homes. Often it is only the young men who travel with the herds. Herders tend to move along a seasonal cycle, staying in the north to cultivate their farms during the rainy season and then heading south in the dry season.

#### Fishing-people

Again, farmers often also fish, but they usually only catch fish in traps or with poison. Professional fisherfolk spend much of their year in canoes or in temporary camps, following the fish or the rise and fall of the river. Fish are the most important source of protein for ordinary families in Nigeria and protecting fisheries is essential to food security in many rural areas. Typical fishing people are the Kebbawa, Lopa, Laru, Reshe, Kakanda, Bacama and the Ijo.

## Hunters and gatherers

Wetland areas used to be full of animals and birds and so hunters were often found there. The animals are now gone but the water-birds remain in some places and there is a trade in smoked birds in the northeast. This trade is destructive and illegal but is carried out openly in many areas. Other trades include frog-catching, also carried out by migrants.

Wetlands are also good places to gather leaves and other plant products. For example, the leaves of the dum palm are widely used for mats and roofing and in *fadamas* where they grow well, people come from the cities in the dry season to gather the leaves. But as the cities grow, traders are travelling further to get fuelwood and in many places the wetlands are being stripped of their trees, which is leaving the riverbanks vulnerable to erosion. The trees that are stripped or cut are often economic trees used by local people for their fruits, so this is both destructive and a source of conflict with local people. People also gather potash for cooking and sell it in the big towns.

### What are the problems typical of *fadamas*?

## Water shortage

Nigeria has a large urban population that tends to be given priority for water use. So many of the rivers have been dammed and the water taken off for the towns. There are also irrigation schemes that take water, such as those to grow wheat in Kano. Some of Nigeria's most important wetlands have been seriously damaged by drawing off water like this (see Box 1). Many farmers complain bitterly about water shortages but also about floods when the authorities open the dam without informing people further down the river.

### Box 1. The fate of the Hadejia-Nguru wetlands

The Hadejia-Nguru wetlands is a major area of flooded swampland in NE Nigeria. A RAMSAR site, it is known for its breeding birds and its plants and animals. It supports large populations of farmers, fisherfolk and pastoralists as well as providing wild resources to outside populations such as firewood and dum palm leaves. Nonetheless, the water that supplies it is gradually being shut off by a series of impoundments, notably the Tiga and Challawa dams which bring urban water to Kano and irrigate fields where farmers are encouraged to grow wheat. The Federal Government has expressed its intention to build further dams, for example the extension of the Kano River Valley Project and the Kafin Zaki dam in Bauchi. If these dams are built the future of the wetlands and the livelihoods of their inhabitants will be threatened.

Source: JEWEL Project

**Invasive species**

**Photo 2. Severe riverbank erosion:**

When you take out most of the native plants and animals you destroy natural controls on weeds, and this is happening all across the *fadamas* of Nigeria. The African water hyacinth is a major problem in many of Nigeria's waterways and the bulrush, *Typha domingensis*, an invasive species that took hold in the 1990s, now clogs many channels. There is for now no solution to the eradication of these weeds and they are likely to continue to cause damage to *fadamas* until better management of water-flows and protection of native species is introduced.

**Erosion**

For a river to remain in one place and flow predictably, it depends on the river-banks holding together. This in turn depends on the vegetation. In the past, almost all rivers had quite thick forest along their edges which held the soil together. With firewood cutting and more and more farmers clearing the banks for farms, these trees have disappeared and the result is serious erosion in many places (See Photo 2). Cracks in the land open up after trees along riverbanks are removed and water then flows rapidly down to the flood-plain. This means that the soil on the farms is lost and that the river widens, making the water more difficult to capture, with the result that streams dry up. There are regulations about farming away from river-banks but these are usually ignored.



**Resource conflict**

As farmers take up more of the river-bank for farms, they come into conflict with the other users, especially the herders and fisherfolk. The herders have been coming to the river for many years for the grass and tend to consider they have ownership rights. When they arrive and find their grazing now covered by tomatoes they may become very angry. The farmers, often desperate to feed their families in a situation where the old rainfed systems no longer work regard the herders as dangerous and intrusive. Too often there are fights and people are sometimes killed. Land hunger in the semi-arid zones has caused a major migration of farmers southwards, both seasonally and permanently. Many uncultivated areas in river flood-plains are now farmed by migrants leading to disputes with their traditional 'owners'. Land tenure is a very vexed subject, especially as there are now land sales in many places. It has happened that as *fadama* land increases in value, communities that sold their land cheaply to outsiders now want to take it back. Many of the migrant cultivators now lease their land and some traditional chiefs have promulgated decrees forbidding land sales. Describing the land tenure accurately is essential to the processes of dispute resolution.

Many of the wetlands are in protected areas, forest reserves and the like. Although the state and federal government would like to protect these, many local populations do not take these regulations seriously and it is common to see herds of cattle in Forest Reserves or trucks carrying away fuelwood to large towns. Hunters often enter reserves to kill animals and birds and this is a major problem for important *fadama* area such as the Hadejia-Nguru Wetlands. Disputes between forest guards and herders often end up in the hands of the police.

**What do people grow in *fadamas*?**

What people grow in *fadamas* has changed a great deal over time. When *fadama* farming first began on a small scale, centuries ago, people tended to cultivate cereals, like barley or rice, or guinea-corn in the northeast. In the 1970s, there was considerable interest in sugar-cane and this is still grown in some areas. But since the 1980s, vegetables have come to be the most important crops. Changing tastes within big cities mean that more and more people are buying carrots, tomatoes and other green vegetables and the cities are always getting bigger. Overfishing has meant that fish are less plentiful and therefore increasingly expensive, so fish-farming is becoming popular in some places.

**Photo 3. Mupun women's workgroup, Jos Plateau**

**Who does the work?**

*Fadama* cultivation, because it is new and tends to be about cash-crops, is primarily a male activity. Even in areas where women farm in the drylands, often they do not farm in the flood-plain areas. Broadly speaking, the further south you go, the more likely you are to see women working in *fadama* areas. One of the few exceptions to this is the Jos Plateau area, where the formation of women's groups to work land for horticulture is becoming increasingly common. One of the objectives of NFDPII is to assist women and vulnerable groups wherever possible; this doesn't mean you have to try and manufacture women's groups where none exist, but simply to be aware that they may be there and particular effort should be made to contact them.



**Why is conflict important?**

Conflict is important because it is ethically unacceptable and undesirable in the context of a modern state. But the specific forms of conflict that are common in *fadama* areas have an impact on the overall situation. Also, the presence of conflict can undermine all the other components envisaged under Fadama II.

Floodplains occur throughout Nigeria, but serious conflict between resource users affects access to them in at least twelve states of the North and Middle Belt. This is because where water is available in these ecozones it can potentially increase production of biomass and the resource has become valuable. In terms of geographical area, these *fadamas* are much more extensive than floodplains in high-rainfall regions. Conflict is therefore mainly found in those zones where the economic potential is greatest.

Conflict can be both actual and potential; clashes and violence occur in reality, but in many communities the fear of violence is strong even though there have been no actual occurrences. Both situations create a climate of tension and make resource users unwilling to invest for the future. If you believe herders are going to sabotage your borehole you may not dig one; if you think farmers will attack your cattle you must use your labour in guarding them rather than improving production.

There is an important difference between mobile and settled resource users in the case of conflict; nomadic groups such as fishers and herders simply move away, whereas farmers usually do not have this option. In other words, problems related to resource conflict stay with resident populations, whereas mobile

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populations can shrug them off. As a consequence, communities can continue to live in poverty while surrounded by potential abundance. If this is the case, then the whole nation loses because there is no incentive for producers to solve problems, build markets and supply chains. Vulnerable groups remain static because the community won't take risks to improve their situation. A chain of interconnections links community level resource conflict to national food security.

The World Bank funded NFDP-I from 1993 to 1999 with a view to building on some of the success of the Agricultural Development Projects (ADPs) in spreading pump and washbore-based farming. This was generally successful, as it went with a general trend towards irrigated agriculture that had been building up through the 1980s. But at the end of the project people thought some things could have been done differently. In particular, people hoped a future project would;

- pay more attention to marketing so farmers could sell the crops they grew more easily
- follow a bottom-up approach to *fadama* development, to increase commitment to the project from farmers, government and NGOs
- consider *fadama* users other than farmers, particularly herders and fisherfolk, to reduce exclusion and conflict
- continue to support crop production, but increase focus on other productive activities
- give more attention to the role women play in *fadama* development.

The World Bank summarise the goals of NFDP-II like this;

The project development objective is to sustainably increase the incomes of **Fadama Users**-- the people who depend directly or indirectly on *fadama* resources (farmers, pastoralists, fishers, hunters, gatherers, and service providers);-- through empowering communities to take charge of their own development agenda, and by reducing conflict between *fadama* users. *Fadamas* are flood plains and low-lying areas underlined by shallow aquifers.

(World Bank 2003b)

But goes on to make the important point that;

The first *fadama* project failed to adequately consider the needs of users of *fadama* resources other than settled farmers. As a result, conflict sometime broke out between them and pastoralists, who found their traditional routes to water and pasture blocked.

(World Bank 2003b)

This is crucial to the new activities to develop *fadama*. It isn't enough to assist some farmers to be successful, although that isn't bad. Projects like this need to think about the situation of the whole community and try to develop ways of both helping each group within it.

### Why do facilitators need to think about conflict?

Any project should be intended to improve the livelihoods of all *fadama* users. This will avoid some of the problems of the first *fadama* project, which didn't pay enough attention to the needs of users of *fadama* resources other than settled farmers. It is important to think about groups that risk being excluded when *fadama* land is developed for farming, such as pastoralists or those without access to land for farming. Ensuring that all the groups of people who use *fadama* land benefit through the LDP is a project requirement, and will help avoid conflict, which is a serious threat to local development.

### What sort of conflicts are you likely to meet?

You are likely to meet with all sorts of conflicts when you go into the field, only some of which you can deal with. To understand the communities you come into contact with, you will need to listen sympathetically to

disputes that may not be directly related to making an LDP. But there are a variety of conflicts that will need to think about. Table 1, Table 2 and Table 3 give some examples of these conflicts;

The conflicts over access rights grow out of the issues described in the previous sections. They can be divided into three broad categories;

**Table 1. Categories of conflict over access rights**

Category	Example
Society-internal	farmer-farmer
Inter-society	farmer-herder
Individuals and communities versus regulatory authorities	fuelwood traders versus PA authorities

**Table 2. Conflict within a community over access rights**

Category	Typical examples
farmer-farmer	both claim land for <i>fadama</i> cultivation, one is taking off water upstream for irrigation
fisher-fisher	setting of <i>dumba</i> nets or using other illegal techniques
	stealing fish from individually owned ponds
herder-herder	established and incoming herders compete for grazing

**Table 3. Conflict between communities over access rights**

Category	Typical examples
farmer-pastoralist	cattle enter crops or graze residues without permission farmers cultivate across stock-routes or in riverine grazing areas
fisher-pastoralist	herders destroy fishing-gear fishing-people block livestock river-crossing places
pastoralist-migrant gatherers	herders cut browse for feed

**Table 4. Citizens versus the authorities**

Gatherers seek wild resources (potash, fuelwood) in National Parks etc.
Farmers take off water from main channels
Taking off water upstream cuts off water to farmers
Hunters poach birds and animals in National Parks etc.
Fishing-people fish in National Parks etc.
Pastoralists go into National Parks or reserves etc. to graze, browse

It would be a mistake to think that communities had no existing mechanisms to settle disputes. Communities would fall apart if they didn't have a way to resolve disputes and some system has been established almost everywhere. This is not to say dispute settlement systems always work; as the modern world has increasing impact on village life, so things come up that have no parallel in the past. New institutions, such as the police and the local government, must work alongside traditional systems. Neither traditional nor modern systems always work; indeed conflict and civil insecurity are now very much part of life in rural areas.

But you ignore these institutions at your peril. A common problem of development projects is that the staff often think they are better educated than the communities they deal with and they often carry handbooks written in other countries that set out methods that are inappropriate and culturally insensitive for dealing with local issues. Find out how people settle disputes and what people think of the decisions they make. Then you can incorporate these mechanisms into the LDP you prepare with the community.

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You can divide the ways people settle disputes into three;

- ❖ Traditional authorities
- ❖ Police, courts and the army
- ❖ Local and State Government

### Traditional authorities

In farming communities, there is a hierarchy of village elders, ward heads, Village Heads and District Heads who can be called on to resolve disputes. If the damage is serious, then a more senior leader is called upon to settle the problem. The main problem with traditional authorities is that their interest in these matters varies from one village to another. Some take action to set up court-like procedures, with witnesses, site inspection and independent assessment of costs. Others make arbitrary judgments, and people commonly accuse them of taking bribes. In some areas, the pastoralists are said to win all cases because they are wealthier than farmers and can pay more. Elsewhere, judgements are said always to go in favour of farmers. Representatives of roughly three-quarters of the villages interviewed said they are satisfied with the traditional authorities. If they weren't satisfied, the next step is usually to call the police.

More forward-looking village heads have established pre-emptive measures; in Yobe and Bauchi this is called the 'Hospitality Committee'. These are local residents appointed by the village head to go and meet with Fulani that are coming to an area or who are setting up camp. Most of these are transhumants who have already visited the area in previous years, which makes meetings easy to arrange. But problems can arise when a new group of herders comes to the area. The Committee tries to establish ground rules with the Fulani, so that if crop damage or other disputes occur, then both sides have accepted an agreed procedure. They also have an indigenous version of a Resource User Agreement, essentially demarcating land where grazing is acceptable and warning off the herders from potential farmland.

One part of the 'traditional' system are the associations that have been formed in recent years to represent the interests of cattle-rearers and fisherfolk. The most well-known of these is Miyetti Allah, a Fulani association that has branches in nearly all states. A similar organisation, Al-Haya, represents the Shuwa and Koyam peoples. A national organisation promotes the views of professional fisherfolk at state and national level. These organisations often play a role in dispute settlement, but they are only as good as their local representative, who may be active or entirely passive. Nonetheless, these associations should never be ignored and but rather worked with and strengthened, as they represent an important group of *fadama* users

### Police, the courts and the army

Official structures such as the police and courts generally have a bad reputation among rural communities and are regarded as a last resort. Pastoralists never take cases to the police; they are natural victims because they can raise money rapidly and don't have the same rights as indigenes/settlers. But farmers do get the police involved when the traditional authorities fail them. The result is usually unsatisfactory, with farmers often reporting they have to make payments themselves to ensure the police take action and often subsequently receiving no compensation for damage to their farms. Pastoralists may be arrested and have to pay large sums to be released. The courts are of little use; people report cases being stuck there for many years. The army has no official role in conflict management at the local level, but some communities and local governments have called them in where civil insecurity has risen to unacceptable levels. Using the army to keep the peace is a last resort.

**Local and State Government**

Local and State Government officials are often themselves in conflict with traditional rulers over who holds power in a region. They would prefer to oversee peace-making committees and be in control, in what they see as their constitutional role. As a consequence, they sometimes undermine local rulers. For example, in Borno State, the traditional authorities have banned certain types of fishing nets as likely to damage fish-stocks. The Local Government chairman however, says that in the light of ‘democracy’, everyone is free to fish in whatever way they choose. In some cases, Local Government has been active in forming peace-making committees, for example in Kebbi State. The problem is that LG officials are elected by a certain section of the community and may tend to be populist rather than taking the interests of all groups into account.

**Do these dispute resolution mechanisms work?**

Traditional rulers undoubtedly play the most significant role in both managing conflict informally and arranging peace-making meetings when matters get out of hand. They are more accountable and responsible than any other group and are the only authorities to take preventive action. However, their power in the community is highly variable.

**Box 2. Conflict Resolution Mechanisms in Yauri, Kebbi State**

On his installation, the Emir of Yauri helped form more than thirty professional and tribal associations. Each association could freely elect its own chairperson. The different chairs elected one representative as member to the Emirate Council. A conflict resolution mechanism was set up at three levels:

- Low level committee, comprising of village head, Fulani and farmer leaders. They can resolve the issue at their level, mostly by mediation and payment of compensation.
- Middle level committee, comprising District Head, Sarkin Fulani and branch chair of the Farmers Association. Very few issues pass this level without being resolved. Even if the issue is with the police or court, the committee can achieve an out-of-court settlement.
- High level committee, comprising His Royal Highness the Emir of Yauri, the Galadima (who also represents the Chairs of Associations) and other members of the Emirate Council. The verdict here is final and the conflicting parties must adhere to it.

Since the establishment of this mechanism, farmers, fisherfolk and pastoralists have been living peacefully with one another. The committees are multi-purpose and it resolves all forms of conflict, not just farmer-herder issues.

**Table 5. Conflict management mechanisms communities already use**

Mechanism	Comment
Traditional leaders	In many areas the authority of traditional leaders has been eroded by development of local government. Where traditional authority is supported this has proved to be the most effective mechanism for low level mediation
Community opinion leaders	Can play an important role in minor conflicts both within and between communities where traditional mechanisms are recognised
Community council	Has the potential in some southern states to provide a low level conflict resolution mechanism if supported by state institutions
Leader to Leader	Councils of traditional rulers, especially in the north can be highly influential but take time to mobilise
Hospitality committee	Effective mechanism which works to pre-empt conflict between farmers and incoming pastoralists
State conflict resolution committee	This can work if given sufficient authority but all too often it ends up producing reports months late and no subsequent action is taken
Associations	Associations formed under F1 tended to be entirely farmers which means that they rarely took a broader view of conflict issues.
Police / Courts	Tends to favour farmers over herders, reflecting general discrimination

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Military intervention	Occurs but not desirable
Occupational agreements	Traditional fishing conflict management mechanisms provide a pre-emptive / low level resolution model for other occupational groups to learn from

They get little support from official channels, notably state governments, and local governments may subvert their power. In some areas they have been opposed by youth groups. Traditional mechanisms for dispute resolution are far from perfect but significantly better than any others and should therefore be a major target for reinforcement and strengthening. The police, courts and army should only be used as a last resort, and state and local governments should work to support and complement traditional process for resolving conflicts.

### Writing up a report

People in Nigeria, as elsewhere in Africa, depend much more on their memories than in other places and you often find someone can tell you about the situation from their own knowledge but that nothing has been written down. But projects depend on written reports to justify release of project funds. Other people, including those in the community, have to read and agree with local development plans. Other facilitators have to learn from them as does the management. So for every community you work with, you need to write up your results. If you have access to a computer, it is much easier to edit your work and share it with other people. Your written records of discussions can then contribute to the local development plan document.

Reports should be brief and easy to read. Typically, they should contain information under the following headings;

- ❖ Name(s) of officer(s), date(s) of work with communities
- ❖ Name(s) of communities and location
- ❖ Name(s) and livelihoods of ethnic groups in the area
- ❖ Names and positions of key stakeholders (e.g. chiefs, leaders of pastoralists, LG officials, leaders of women's groups)
- ❖ Description of the situation of the *fadama* (rainfall, vegetation, infrastructure)
- ❖ Description of the main users and how they use *fadama* resources, including notes on land tenure
- ❖ Description of potential or actual conflict(s)
- ❖ Description of existing conflict management mechanisms and some examples to show if they do or do not work
- ❖ Outline of suggestions by various stakeholders as to the resolution of these conflicts
- ❖ Projection of environmental and demographic trends that will affect the situation in future
- ❖ Synthesis leading towards the preparation of a Local Development Plan (LDP)

The first eight points here are relatively straightforward; they simply involved describing the situation. But your skills and creativity will be involved in the last three. In the appendix there is an example of such a table (p. 1), filled in using information from a real interview site to give an example of the sort of data you will collect. But full notes would be much more detailed.

People are very passionate about their situation and it is quite easy to be caught up in the emotions around local conflicts. When this happens it is possible that you may find yourself taking sides, especially if you are from the same area. You must avoid this; it is the job of the facilitator to be as neutral as possible, to listen to all sides and try and come to a view that all the communities can agree on.

Write in clear, simple English that can be understood. Don't use pretentious roundabout phrases or terms borrowed from textbooks. Ideally you would want any member of the community who can read English to understand your report.

## Tools

### 'Package' techniques, PRA/PLA, SARAR etc.

Many rural sociologists are now trained in variously named interview and assessment techniques, such as PRA (Participatory Rural Appraisal), PLA (Participatory Learning Action), SARAR. and others are no doubt being developed. The ideas behind these packages are useful in helping you understand relations with communities and eliciting information. **But they are no substitute for sensitive, thoughtful interviewing techniques and awareness of the local situation.** You cannot always work to formulas where situations vary so much. Read the manuals, absorb the ideas, but don't come to interviews with a set of pre-packaged questions; you'll get formulaic answers.

### Preparing Resource Use Plans (RUPs)

One of the first actions in the field is to prepare a Resource Use Plan (RUP). This will show what the zone is currently used for, as well as plans for future use. It will be a sort of sketch map that shows all the key features of the local landscape as they apply to farming, grazing, fishing and access to resources. So the map will include rivers, roads, settlements, ponds, farms, grazing areas and anything else that may be relevant. The first version of such a map is usually simply drawn by hand on a large sheet of cartridge paper. You do this by sitting with the community and sketching out the map using both what they say and your own eyes. Then you will need to take the same map to the other stakeholders, to get their ideas and corrections. Once you have taken the amended map back to the first community, and arrived at a version everyone agrees on, then you can have it redrawn. You must ensure the accuracy of basic drawings, *and* that they reflect the views of all stakeholders and they represent the evidence of your own eyes concerning rivers and farms. You may get a chance to make your map on computer, but if not then a well-drawn hand version is just as good. If you can compare it with an Ordnance Survey map to check the distances, so much the better. Map 5, Map 6 and Map 7 show examples of such resource use maps prepared with a communities in Plateau State. Communities can help you document the main users of which areas of the *fadama*, and this information can be written up to accompany your map. These documents can be used to help design local development plans.

### Preparing local development plans

The baseline activity for each community is preparing Local Development Plans (LDPs). These documents set out the rights and responsibilities of each stakeholder community in a particular area, both with respect to the present and to their future plans. For example, farms must not be sited so as to add to riverbank erosion. Cattle tracks to allow drinking must be of at least a certain width. Dispute resolution mechanisms must be specified. The LDP will be agreed between the community and the State Fadama Development Organisation (SFDO) and will form the basis for all future development activities, so it is very important that it be accurate and also practical.

Remember that LDPs are not just about the present; they are also about a vision of the future. Part of sitting with the community is trying to project trends; where does the community want to be ten years from now? Try to think about the following issues;

-  How much is the human population going to grow?
-  Is there enough water at present? If people keep taking it will there be severe shortage in the next decade?
-  What is going to happen to markets? Will demand for vegetables increase or should people be growing more staples?
-  Will fertiliser be affordable?
-  What is the land tenure system? Will trends regarding buying and selling land continue?

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LDPs are dynamic; they will change as the community experiments and new infrastructure is put in. Don't ignore other possibilities; for example the damming of a key waterway might change the whole pattern of *fadama* farming. A major epidemic of cattle disease might reduce the pressure on the grazing land. Be flexible and ready to rethink, redraw and reformulate.

### Skills

#### Practical knowledge

No matter what textbook knowledge you may have acquired, practical knowledge of the local situation is vital. You need to know something about the conditions under which farmers, fisherfolk and herders function to effectively describe the situation and to have useful discussions with them. You will need to know about seasonal river flows, different types of vegetation, the crops they grow in the area, how they are marketed. To understand competing claims for access to land you need to understand how the land tenure systems works and how it has been changing under pressure from modern times. You need to know all the ethnic groups in the area, including those that only come for a short period of the year and the relations between them.

#### Language skills

##### Photo 4. Interviewing Fulbe herders

Facilitators certainly need community skills, notably an appropriate manner in dealing with communities often living in remote areas. But you will also need language skills; to be able to speak to people directly or indirectly through a translator. What you must not do is assume that because you speak a regional language such as Hausa, English or Yoruba that this 'will do'. It won't. Developing plans with the community involves gaining the trust of a wide variety of groups and this cannot be done only through a major language. So sometimes you'll need to 'buy in' linguistic capacity, to find a speaker of a local language who can put your point across effectively and inspire the community with the confidence to talk to you without concealing important things. This may be a member of the community who speaks the local language and can translate for you.



#### Cultural skills

The communities you will be working in have a great variety of customs and cultural patterns that will affect how you interact with them. You'll need to be aware of these if you want to gain their trust and ensure they answer honestly in discussion groups. If you are from the area already, you may be aware of much of this. But often you will be working in a multi-ethnic situation and you won't necessarily know all the customs of different groups.

One of the dynamics of large group discussions that affects the way you work with communities is the unwillingness of minorities to make themselves heard in community-wide discussions. For example, in much of the north, Hausa is a common language and non-Hausa speakers, in particular herders such as the

Fulani and Shuwa, will often attend meetings and listen to what is said. However, they are unlikely to speak up in their own defence to set the record straight or even to deny the sometimes harsh accusations that are made against them. **You must take your discussions to them, speak to them in their own settlements and in their own language.** If you do this, you can then get their story and you may find it contradicts the story told to you by other *fadama* users such as farmers. One of your responsibilities is to ensure that all voices are heard. Photo 4 shows an interview with Fulani herders in their camp in Plateau State.

As a facilitator, you'll face a number of problems. Problem-solving is part of being a facilitator. Some of these will be practical, like finding interpreters, getting transport to the field, disentangling contradictory stories etc. Some will be more difficult to solve and require tact and patience.

### Distrust of government

Whatever impression politicians like to give, distrust of government is widespread. Villagers have been given many promises over the years and very few of them were fulfilled. In a time when schools and clinics are closing down, coming to a village with yet more promises is likely to be treated with scepticism and rightly so. It is your job, as a facilitator, to overcome these prejudices through honest and sensitive dealings with the community. Don't make promises you cannot fulfil and don't try to lie or cover up existing problems; people will quickly see through you. A number of cases of apparent frauds practised on FUAs (now FCAs) under Fadama I have left a climate of resentment and you'll need to help investigate and sort things out. In fact, taking action in this way will help build trust between you and the community.

### Meeting with nomadic people

Many of the most difficult problems of NFDP-II will come from trying to get commitment from nomadic groups, whether herders or fisherfolk. Mobile people simply aren't committed to communities like the people who live there all year round. But these groups still have legitimate rights to using *fadamas*. If you come to graze for a few weeks every year, if there is a serious problem you may just move somewhere else. Similarly, if the fish stocks change then fisherfolk simply find another waterway. At the same time, nomads are more likely to use violence to get their way, because they don't have to live with the community afterwards and because they are unfamiliar with or do not have access to local dispute resolution mechanisms. Unless a way of bringing nomadic peoples on board is found, many of the other peace-making and conflict reduction mechanisms will likely fail.

This is not really something that can be solved at the local level, though only reports from the local level can help the state and Federal governments decide on a policy. Some of this must be conducted internationally, with representations to the governments of neighbouring countries. Some states have taken direct action with aggressive pastoral communities, but more action between co-operating states is evidently required.

Nigeria is a large country and there are many communities working in *fadama* areas. You can't help them all. So one thing you'll need to do is decide where you are going to put in effort, so you don't waste your time in a hopeless situation. There is nothing more frustrating than continually working with communities locked into a struggle with each other which may not have much to do with *fadama* and be rooted in long-running cultural or economic conflicts.

One way of thinking about this is to use a system called *triage*, which simply means dividing all situations into three. In the case of conflict over access to *fadama*, this could be;

1. Where the conflict is **intense** and violence is very common. Mediation simply over resource issues won't resolve matters and there is no guarantee that either side would keep to any agreement made.

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So, should the FII proj not function in these areas? Where there is not conflict management mechanism, there can be no LDP. Example: Northern Kebbi State

2. Where conflict is *occasional*, where some land is still available, and where traditional chiefs still have authority and where fadama cultivation is likely to increase and cause further tension in future. These situations are the majority of cases and sensitive intervention could act to head off trouble and improve overall natural resource management
3. Where the different stakeholders have already evolved a rational plan for management of resources by agreement between themselves and have implemented the plan. Intervention should be limited to assisting with documenting the plan and using it as an example to inspire other communities. One example is the Eastern Jos Plateau

If you can divide up the communities you visit according to this scheme, then you will be able to target your work more effectively. Most communities want to lead a quiet life and want to solve their problems. Very often all they need is a bit more information about what is going on in other parts of the state and what plans are being envisaged. As part of your survey and planning work you need to identify and focus on these cases. Don't try to solve complex problems that may have little to do with NFDP-II.

Once you have written a basic report and drawn up the first version of the LDP you need to go into a period of checking and thinking about your work. It needs to be read by both the communities in question and by the SFDO officials.

### Going over your results with the community(ies)

You sometimes get the impression from conflict resolution handbooks that the sides in dispute will conveniently come to the table, or at least to nearby tables, to lay out their positions and come to an agreement. But often this is not the situation in Nigeria, and as we said earlier, it is sometimes a bad idea to bring together minorities in a meeting if you want to find out the truth. So when you have put your report together, you'll need to take it back to all the different stakeholders and discuss it with them, see how what different people say and revise it again. This process is called 'iterative', i.e. when you take something back to the people who gave the information, check it and rewrite it until you come to an agreed version. This won't always happen, of course. Sometimes inter-related communities two or more different versions of "facts" that cannot all be true. One side may say that all conflicts are settled informally by the chief, the other that the police are always being called in. Sometimes you can check these things, but often it is impossible to know exactly what the truth is. So you have to work around these contradictions.

### Discussing the report with other facilitators and *Fadama* development officials

When you have something you have agreed with the community it is then advisable to work through it with your colleagues. Often, their experiences in different villages can help you think out how to solve problems. For example, suppose you decide that establishing live fencing would be a way to protect cattle routes from encroachment. Another facilitator may have seen something like this already working and can give you advice on the best way to establish it. You will also discuss the report with the SFDO officials who should be able to give you advice on the best way to prepare it and get the Fadama Community Associations' applications off the ground. Never be ashamed to ask for advice; you will be much more embarrassed if the LDP fails through poor preparation.

Nigeria is a large country with great diversity. To help you find about more about the area where you are working, it is helpful to read as many background documents as you can find. The list at the back of this handbook gives you some of the important published references. Photocopies will be lodged with PCU or the SFDO so that more copies can be made for other facilitators. But often unpublished reports, such as those commissioned by the Federal Government, the World Bank or other international donors such as DFID

may be just as useful. These are also listed at the back and they should be available as computer files or on the internet.

## **II. Natural resource conflict in Africa<sup>1</sup>**

### **1. Introduction**

Although Africa is a major source of raw materials, with few exceptions it remains non-industrial, with the great majority of the population continuing to depend on surface natural resources, land, water, flora and fauna. Even where economies are buoyed up by extractive industries, such as in Gabon or Nigeria, a failure to invest in dependent industries has meant that the urban populations supported by mineral income must still be fed mainly from local production. Agricultural production and energy has by and large not been modernised, so the vast majority of African farmers depend on techniques already developed in the pre-colonial era while firewood and charcoal continue to cook most African meals.

Such dependence on raw materials was practical in the pre-colonial era, because the overall population was small. But during the twentieth century, greater access to medicines and improved nutrition has stimulated an almost unparalleled demographic increase. The population of West Africa may well have risen 1000% in the last century. The consequence has been unparalleled pressure on natural resources from resident populations. Waters are overfished, forests cut down, pastures overgrazed and soil fertility exhausted.

Apart from this, the forces of globalisation have encouraged the growth of a wider range of extractive industries, supplying ever more remote markets. Taiwanese boats come to West Africa to cut off the fins of sharks to supply a Far Eastern market. Worldwide demand for exotic timber has caused massive deforestation in the humid zones, especially where cutting can be done under cover of war or civil insecurity. Elephant tusks and rhino horns command high prices in specialised non-African markets and little can be achieved in the long-term struggle against poachers; the rewards are too great. Coastal waters are fished by EC trawlers, fresh from mismanaging fisheries resources in European waters.

With these forces at work, competition for natural resources becomes ever more extreme. On a larger, national scale, access to oil, minerals and timber fuels civil and international war. On a more local scale, fishermen, farmers, hunters and herders may all be trying to make use of a single resource. Historically, this sometimes developed into co-operative regimes where different economic groups were able to use a resource in sequence. Africa has had a complex repertoire of Common Property Resource systems. But increasingly these have broken down all over the continent, both because of excessive use and because of a trend towards individualised land ownership, a trend promoted by donors for ideological reasons.

The consequence has been that everywhere has seen an expansion of low-level local conflict. This rarely makes the news and is not characteristic media material. But nonetheless, it is a factor in everyday lives, as rural populations live in fear and insecurity and are increasingly vulnerable to climatic shocks and other disasters. Typically, when a famine or drought reaches proportions significant enough to make worldwide television, development journalists appear, wringing their hands asking why haven't we managed to prevent this happening again? Didn't we learn anything from the previous disaster?

The answer to this is generally no if the question is how to head off further famines. But what is learnt is the better management of disasters. Donors and government ministries are generally unwilling to address the root causes of over-exploitation of resources because solutions tend to be politically unpopular. So the aid agencies and NGOs become more efficient at flying in food, setting up camps, preventing disease, providing background footage for rock concerts and generally managing the media. But analysing, developing and implementing effective natural resource management is now a very low priority.

One reason for this is that development projects which concentrate on particular natural resource sectors (forestry, livestock, water etc.) have frequently had an unhappy history, in part because they do not take into account the interactions with other sectors. There is no virtue in increasing a water resource if the effect is to attract greater numbers of livestock and thus accelerate erosion. Trying to manage a pasture resource in

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<sup>1</sup> This section adapted and updated from Blench (1998c)

a zone of agricultural expansion can be like making water flow uphill. Establishing national parks and increasing wildlife numbers often increases crop damage and prevents pastoralists making use of existing resources.

Suggesting that development projects be aware of inter-sectoral linkages is nothing new; however, highlighting conflict in preparatory documents can sometimes be tactless. Yet to be aware of the nature, causes and potential results of such conflicts must be part of successful development planning. Another aspect of this is cross-border movement: pastoralists and fishermen have a habit of traversing borders in pursuit of fish or pasture, often following pre-colonial patterns. Development projects usually stop at national frontiers and taking into account this type of mobility may result in political objections. Semi-arid Africa has a poor record of successful development projects in part because of resource competition. When resources are short and populations live on the edge, minor deficits in rainfall, pasture etc. can often have major consequences. The remainder of this section considers the types of conflict that occur in Africa and approaches (or lack of them) to their resolution.

## **2. Categories of conflict**

A survey of the literature on this topic suggests that the major arenas of conflict are;

- a) pastoralists/livestock producers against cultivators
- b) fishing peoples/hunter-gatherers opposed to both pastoralists and cultivators
- c) large-scale agriculture against traditional land users
- d) forest/wildlife reserves against traditional land users
- e) rural populations opposed to industrial enterprises, especially mining
- f) rural populations opposed to large infrastructural projects such as dams
- g) rural populations opposed to tourism/wildlife interests
- h) urban resource users extracting rural resources such as water and woodfuel
- i) industrial/urban uses of coastal waters versus small-scale marine resource exploitation

Of these, the conflict between livestock producers and cultivators is dominant both geographically and in the literature, principally because it occurs throughout the semi-arid zone. Other sources of conflict may be locally important but they are essentially tied to point enterprises, such as mines, game parks or infrastructure projects. Mines are limited in scope and large-scale farms are not common in the semi-arid regions except in Southern Africa. Conflicts between inland fishermen and cultivators seem to be less common, in part because their resource spheres are often not directly in contact. Moreover, some types of agriculture can actually encourage fish populations. However, in coastal waters the situation is often more problematic as semi-industrial fishing conducted via national government licensing is often conducted by outside fleets. The rise of tourism and the growth of the wildlife and ecology lobby in Eastern and Southern Africa has become a very fraught issue in recent times, especially in regions of high pressure on arable land.

## **3. Ecology and politics in the nation-state**

### **3.1 Changing ecozones**

Apart from the demographic growth already highlighted, the colonial era had other important impacts on natural resource exploitation. One aspect of this was the suppression of chronic warfare. In West-Central Africa, chronic raiding, especially from the Muslim states of the savannah, had the effect of driving large populations into refuge areas, especially into hills and inselbergs. One consequence has been the formation of dense populations in regions such as the Atakora mountains in Togo and Benin and the Mandara in

Cameroun<sup>2</sup>. Hill agriculture is picturesque and involves considerable labour investment; montane populations have not generally left their terraces lightly. In the colonial period, the authorities actively encouraged and sometimes forced populations to descend to the plains so that they might be more accessible for taxes and administration and could thus be pressured into cash-cropping. This strategy met with considerable resistance and was only partially successful. Moreover, the consequent disrepair of montane terracing would now be regarded as a very environmentally unsound policy.

Nonetheless, as a consequence of greater security and rising access to infrastructure a move to the plains all across West-Central Africa *has* gradually been stimulated. In the years since the 1960s, many small hill-settlements have been deserted. The result has been a dramatic change in farming systems, usually from intensive cultivation with elaborate soil and water conservation to either shifting cultivation or low-density rainfed cultivation. Such a move inevitably impelled the new plains farmers to try and acquire tenure in an area where they had no historic rights; in some cases there were farmers already on the plains whereas elsewhere hill-farmers began to farm in rangelands claimed by pastoralists.

Although clear cases of the descent of hill-farmers have been documented historically in West Africa, this process seems to have occurred in Eastern and Southern Africa in the precolonial era. In NE Zimbabwe, for example, the Nyanga area is dense with terraces and irrigation channels, suggesting that the population was once more numerous and practised a more intensive agriculture. However, the terraces seem to have been deserted before the coming of Europeans, perhaps in the conflict with Ngoni in the early nineteenth century. Similar irrigation systems have been recorded in rocky outcrops in Kenya and Tanzania, often in disrepair prior to European contact.

This is one rather clear example of a more general principle; that dramatic shifts in economic and security systems can lead to different ecozones becoming more attractive to farmers. For example, the demographic literature on West-Central Africa often refers to the 'underpopulated' Middle Belt, corresponding to the subhumid zone. Demographic syntheses undertaken earlier in the century seem to show this phenomenon, representing concentrations of settlement in the humid and semi-arid zones. Exhaustion of soils elsewhere and the rise of cultivation techniques that can compensate for the low yields in the subhumid zone have attracted farmers, creating competition for a resource that was formerly disdained.

### **3.2 Changing social structure**

Related to the new order of the nation-state relevant to conflict in the pastoral areas are marked changes in social structure and in particular a breakdown in the acceptance of former hierarchical relations. Just as in the West, special interest groups increasingly challenge the process whereby the governments of nation-states make decisions for them, so sections of society at the bottom of the social pyramid in Africa have begun similarly to assert their rights. Authority systems that depended on farmers being subservient to pastoralists have gradually collapsed in the post-colonial era. For example, in Nigeria, many non-Muslim populations were placed under a local juridical system controlled by the Hausa/Fulani during the colonial period. Court cases between herders and farmers tended almost invariably to be decided in favour of herders. However, after independence, farmers began gradually to take control of local authorities and thus judicial systems and their own appointees made decisions in courts. The result has often been a reversal of the previous bias.

In the case of seasonal pastoral migrations, committees were established throughout Anglophone West Africa to ensure that established cattle routes were respected by both farmers and pastoralists. These committees functioned into the early years of independence, but have now been largely disbanded. Many years of seasonal migration of cattle herds have created fertile north-south swathes. Declining soil fertility in

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<sup>2</sup> The historical literature encompasses considerable discussion as to the antiquity of these montane populations; certainly there has always been a low-density scatter in the mountains. However, it does seem that the intense exploitation of the inselbergs was a response to organised mounted raiders.

many regions has made these attractive places to farm, outweighing the dangers of possible conflict. Farmers have also been emboldened by taking control of the local or regional administration in many areas. In Ghana in particular, farmers' lobbies have enshrined a strong policy of simply excluding nomadic pastoralists from the country and the types of seasonal north-south movement characteristic of much of the rest of West Africa are by and large absent.

### **3.3 The exploitation of patchy resources**

Semi-arid regions, because they tend to support patchy resources, also usually have dispersed human populations. Either these move in search of resources that vary annually, such as fish or pasture, or they adapt cultivation to varying conditions of soil fertility and rainfall. Either way, flexibility is a key element in subsistence strategies, often at the expense of coherent communities. In the same way, patchy resources imply intentionally ambiguous tenure systems that allow multiple claims. African wetland areas represent a particularly evolved example of such multiple claims on common property resources.

Wetlands have undergone a spectacular reversal in image as a consequence of scientific research during the twentieth century. It is now realised that they represent major reserves of biodiversity, that they supply irreplaceable ecosystem services and that their total productivity in fish, wildlife, grazing and agriculture is far greater than the monocrop agriculture that very often replaces them. In many areas of the world wetlands loss has been halted, sometimes because hunting lobbies wish to conserve waterfowl in order to shoot them, but increasingly because they are defended by 'green' advocacy groups. This is very much less the case in developing countries where an unequal distribution of power often means that the livelihoods of poor and dispersed households living in inaccessible habitats are sacrificed to the interests of peri-urban, articulate pressure groups. Without modern communications, the residents of wetlands may demonstrate considerable local anger but will be unable to make their views impinge on higher levels where the power lies and key decisions are made.

Nonetheless, it is now widely recognised that wetlands must be protected and the relevant international agreement is the RAMSAR convention, first established in Iran in 1971 and currently ratified by some 120 countries worldwide, including Nigeria. By 2000, there were some 1021 RAMSAR sites in the world covering some 74.8 million ha (Mitch and Gosselink 2000:650). Signing a convention is far from taking steps to implement it, and many countries have argued that this is a costly exercise which often benefits ornithologists from the developed world rather than their own populations. Such arguments are politically convenient, but spurious; analyses of productivity regularly show that wetlands are of greater economic benefit to a nation in their existing form. However, when weighed against needs for irrigation or urban water supply from a nearby population, governments regularly find it expedient to ignore such arguments.

### **4. Large infrastructure projects**

Large infrastructure projects were seen in the mid-twentieth century as part of the way forward for Africa, especially hydroelectric dams and irrigation. A striking change in perspective during the decades since the 1960s is the gradual disillusionment with large infrastructure projects. Projects such as the Aswan and Kariba dams went ahead with scarcely any voices of dissent. Very little was known about the ecological effects of such projects and the opinions of existing populations were either not taken into account, or if they were considered it was somehow assumed they would be in favour of 'progress'.

Neither of these assumptions, the beneficial effects on agriculture and ecology and the assent of the indigenous populations, have been justified by subsequent history. So much damage has resulted from similar dams worldwide that large multilateral lending organisations have virtually ceased lending on these projects, partly in response to widespread public concern. However, the conviction of Western ecologists is not entirely shared by the governments of developing countries, as the issue of the Three Gorges Dam in China illustrates all too graphically. On a smaller scale, wealthier African governments have not entirely

discarded the association of dams and progress; the Nigerian government has continued to promote dams for irrigation on the Hadejia-Jama'are and Sokoto-Rima systems in the face of clear evidence that the economic benefits are slight and the impact on downstream populations deleterious.

The responses of government to objections to proposed infrastructure projects are usually far from subtle. Populations are simply moved in short order and there is generally no legal or other redress.

## **5. Reserves and Protected Areas**

The tradition of reserving areas of wild land is not a new concept within African culture. Reserved forests, retained for either hunting or the gathering of non-timber products and usually surrounded by spiritual sanctions, were common prior to the colonial era. Such 'sacred groves' have sometimes survived into the present, but they are often threatened by arable expansion and a changing socio-economic context that makes the cultural prohibitions ineffective against, say, the advance of charcoal burners or urban hunters with high-powered rifles.

In the colonial era, a policy was established of creating forest reserves, usually reserved areas where the rights of indigenous populations to hunt, cut wood or graze their livestock were severely limited. In most cases, the boundaries of such Protected Areas were simply declared through the expedient of putting up notices, but a legal process of gazetting was established and in both the Anglophone and Francophone territories numerous small reserves were eventually mapped. It is interesting that in the earliest agreements of this type, at least in Ghana, considerable account was taken of the needs of local populations and their rights to non-timber forest products were clearly spelled out. Recast in modern terminology this closely resembles participatory management. Later in the colonial era, policing strategies came to predominate and adjacent populations were simply excluded from all access.

The modern notion of Game Reserves seems to post-date the Second World War, since prior to that, large mammals were perceived to be so abundant that conservation measures were unnecessary. Large game parks with sporadically effective policing are very much a feature of the Eastern and Southern African region. Game parks in West-Central Africa have never been so large, numerous or effective. This results from both a much greater density of tourism in Eastern and Southern Africa, even from an early period, matching the higher proportion of true colonists.

Needless to say, in the colonial era, forest and game reserves were established largely without the consent of or even in discussion with local people. This may not have been as problematic as it would be today, in part because reserves were usually established where there were few or no settlements, to avoid the financial and administrative costs of moving out whole villages and because a lack of effective policing meant that hunting, gathering and grazing continued, largely unaffected by wooden signboards.

However, as human populations have increased, these issues have become more fraught. The major reasons are;

- a) changing perceptions of conservation now suggest that categories of environment and species other than large mammals deserve protection (a switch from headline species to overall biodiversity)
- b) the globalisation of markets in products such as ivory and rhino horn make poaching an increasingly attractive option
- c) increased arable farming, grazing and charcoal production cause the value of reserved land to rise
- d) communities becoming more self-conscious and aware of their rights

Within nation-states there is often a conflict between the value-system of local communities who may favour some type of conservation option for reserved areas to protect their future resources and individuals or sections of the state from beyond their boundaries who may seek to exploit a resource for immediate gain. For all these reasons, development projects with a conservation element have begun to try and co-evolve

strategies with local communities. It is certainly true that without the co-operation and active involvement of local communities no conservation project has a chance unless the state is willing to expend heavy resources on policing. However, involving local communities is also not simple; there is, for example, no guarantee that any type of pre-existing culturally sanctioned conservation ethos is present. Nomadic pastoralists, for example, who depend on moving once they have used or overused a region of pasture, do not overnight become range managers. Agricultural peoples used to cutting trees freely may not immediately see why they should rein in this activity when the trees appear to still be numerous.

Apart from this, the 'community' can prove to be an elusive entity. This has proved problematic in the long, fraught sagas of returning profits from wildlife reserves back to a community (such as the Zimbabwean CAMPFIRE programme) which has agreed to cease hunting or gathering in a reserve. Many reports highlight either long delays in returning revenue, payments to inappropriate interest groups or the disappearance of funds. Unless systems of more direct revenue return can be devised, this problem effectively sabotages schemes, no matter how well designed, of involving the community in wildlife and environmental management.

## **6. Large-scale farms**

The clearing and persistence of large-scale farms and ranches in West Africa has never created a major problem of resource conflicts, if only because such enterprises have little or no history of long-term sustainability. The absence of true colonies and high population densities as well as a well-organised traditional agricultural sector have made these enterprises less than viable. However, in Eastern and Southern Africa, the process of colonisation was accompanied by a major alienation of land from African smallholders, especially in Kenya, Zimbabwe and South Africa. Subsequent to this process, to which the indigenous populations have adapted, there has been the implementation of large agricultural schemes. In Ethiopia, extensive tractorised farms were established during the period of the civil war to produce food to export in order to pay for arms. In Tanzania, the government established large-scale wheat farms with the assistance of the Canadian government. These have displaced considerable numbers of pastoralists whose case has been taken up by various international organisations. It may well prove hard for African governments to persist with this type of enterprise in the face of active opposition from local populations. Nonetheless, as the slow process of land reform in Zimbabwe and Namibia has shown, once large farms *are* established the revenue and benefits from food production often make governments unwilling to dismantle them, despite rhetoric to this effect. The recent seizure of large-scale farms in Zimbabwe is hard to interpret. It is presented by government as a rightful taking back of land seized in the colonial process; but as many of the farms seized from expatriates have been transferred to government ministers rather than their original owners this justification appears to be somewhat spurious. Certainly Zimbabwe appears to have severe land shortages in all areas as well as declining agricultural production.

## **7. Conflict reduction**

It can safely be said that whatever conflict reduction mechanisms are being used in Africa, whether traditional or modern, indigenous or imposed, their record of success is very patchy. The reasons for this can be simply summarised;

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- Demographic growth means that ever-greater populations are competing for a dwindling stock of resources (land, water, trees etc.) without significant intensification of production
- Access to modern weapons exacerbates the violence of individual conflicts and complex transactions through third parties ensure their supply
- Globalisation has made predatory consumers in the developed world ever more aware of the location and accessibility of natural resources (minerals, timber etc.). Such predatory consumers frequently operate via countries in the developing world with less restrictive regulatory frameworks, thus displacing the ethical burden.
- Ethical policies are inevitably compromised by constantly changing political priorities

Without a radical shift in addressing these issues, the situation can only deteriorate.

**III. The analysis and management of natural resource conflict in Northern and Central Nigeria****1. General Nigerian environmental background<sup>3</sup>****1.1 Climate**

Nigeria occupies 923,768 km<sup>2</sup> (FOS 1989) and is a country of marked ecological diversity and climatic contrasts. A useful description of the overall physiography is Buchanan and Pugh (1955) largely reprised in Udo (1970). The only published atlases to cover most of the major ecological features are Federal Surveys (1978) and Barbour et al. (1982). Soils are largely of the ferruginous tropical type, with alluvial deposits along the major rivers - the Niger and Benue. Together with the Lake Chad Basin, these rivers constitute the major drainage basins of the country, with several important catchment areas, such as the Sokoto-Rima system in the north-west, and the Donga and Taraba rivers in Taraba State. The other major topographical features are the highlands of the Jos and Mambila Plateaux, which despite occupying a relatively small area, are of considerable significance to the livestock populations.

Nigeria's climate is determined largely by the seasonal movement of the Inter-Tropical Convergence Zone (ITCZ) which leads to contrasting dry and wet seasons and a marked north-south rainfall gradient. Northern areas receive substantially less rainfall and have a much shorter wet season: mean annual rainfall is less than 500 mm in north-eastern Nigeria, with only 2 months a year receiving above 100 mm. In the south-east, rainfall exceeds 4000 mm annually, with more than 100 mm falling during at least 9 months of the year. The rainfall patterns are modified, in the centre of the country, by the Jos Plateau: to the south-west, precipitation rises to 1500-2000 mm annually; to the north-east, the highlands cast a rain-shadow which significantly reduces rainfall.

Though the seasonal and geographical rainfall patterns are relatively consistent, they are modified by differences in the movement of the ITCZ. Such variation is less significant in the south because of the proximity of the Atlantic, but the north suffers from the periodic droughts that are an increasingly familiar characteristic of more arid countries of the Sahel. There were droughts in the mid-1970s, 1980s, in 1989-1990.

**1.2 Vegetation**

The natural vegetation of Nigeria reflects its climatic and topographic diversity (Map 2). Paramount influences are the rainfall gradient, the minimum relative humidity, and the length of the dry season. As a result, dominant vegetation types range from the dense mangrove forests of the Niger Delta and the rain forests of the south, to the dry grassland of the north, and also include areas of montane grasslands on the Jos and Mambila Plateaux.

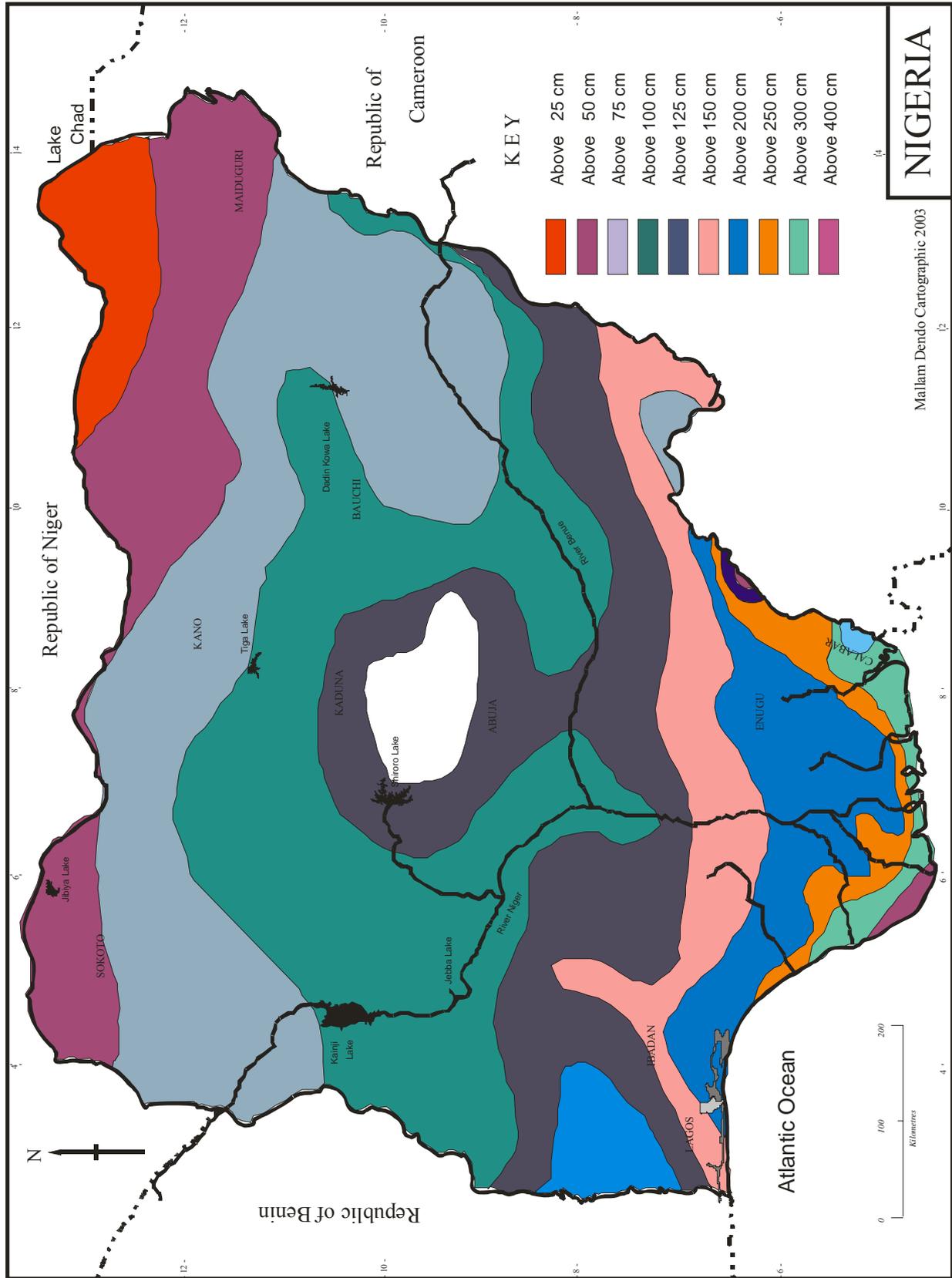
A number of classifications of Nigerian vegetation have been published since the 1950s. The development of categories reflects changing perceptions of the significance and value of such classifications. The former trend was to consider vegetation in isolation from cultivation and other aspects of human intervention. However, as it has become clearer that most of the landscapes in Nigeria are anthropogenic in some way, vegetation and land use are most often considered together in current classifications.

Keay (1959) established many of the vegetation classes that are still used today, including mangrove, freshwater swamp, and wet and dry forest types. The last two of these are structurally very similar, though differing floristically; mature wet forest has all but disappeared in Nigeria, although dry forest, mostly in forest reserves, is present in many parts of the south, including Bendel and Ondo States. The Delta area of Rivers State, and of neighbouring states, hosts mangrove and freshwater swamp forests, the latter type being an 'edaphic variant of rain forest' confined to the banks of the Delta's numerous waterways.

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<sup>3</sup> This section adapted and updated from RIM (1992)

Map 1. Nigerian rainfall



Keay's southern guinea savannah, or transition woodland, denotes areas comprising both forest and savannah type vegetation. Widespread throughout the middle belt and beyond, for example around Minna and

Makurdi, this type of woodland readily transforms into grassland. The denser, two-storey, broad-leaved woodland, or northern guinea savannah, is also common, but further north. Sahel savannah, an open thorn woodland dominated by *Acacia* species, is confined to north-east Borno State. A composite of this latter type and Guinea Savannah, described as Sudan Savannah, is prevalent in Sokoto, Kano and Borno States, frequently much modified and degraded.

An ecological zonation of natural vegetation, reflecting the situation in the late sixties and early seventies, is the National Atlas of Nigeria (Federal Surveys, 1978). The stratification follows Keay (1959) but refines the zonal nomenclature: coastal; mangrove; aquatic grassland and herbaceous swamp; swamp forest and riparian forest; sub-montane forest; moist lowland forest; dry forest woodland; wooded tropical steppe; edaphic and biotic savannah.

In his 'Vegetation Map of Africa', White (1983) identifies 11 different vegetation categories within Nigeria, all variants of forest, woodland and wooded grassland types (with the exception of those in upland areas). Forest vegetation is characterised by multi-storey woody species, in excess of 10 m in height, with interlocking crowns, usually non-fire-tolerant, and with little or no grass beneath. Woodland comprises open stands of trees standing at least 8 m tall, and giving a canopy of 40% or greater. Savannah is dominated by grass with fire-tolerant woody growth present. Grassland and wooded grassland are distinguished as having less than 10% and 10-40% woody vegetation respectively. Map 2 is adapted from the classification of White.

A more detailed classification of Nigerian vegetation is the set of 69 Vegetation and Land Use maps, derived from Side looking Airborne Radar (SLAR) imagery, obtained during the mid-seventies, which have been published at a scale of 1:250,000 by the Federal Department of Forestry. Some 45 different vegetation and land use types, collected into 10 major formations, are identified.

Several wider regional zonations have also been put forward, such as the 'eco-climatic zonation' developed by FAO and ILCA (ILCA 1979c). Though defined in agro-climatic terms of plant-growing period, it is also a very general indicator of vegetation zones. The Humid Zone, where annual rainfall exceeds 1500 mm, corresponds approximately to the forest zone, whilst the Sub-humid and Semi-arid Zones, having 1000-1500 mm and 500-1000 mm average annual rainfall respectively, partially reflect the limits of Keay's northern and southern guinea savannahs. The Arid Zone, with less than 500 mm rainfall per year, occupies a relatively small part of the country, and is restricted to its northern extremes.

Natural vegetation is locally variable, with swift transitions between these broadly defined categories. All formal classifications comment on the influence of man-induced changes on the natural environment. Encroachment into natural vegetation by active cultivation has created a number of transitional or derived vegetation types. Remnant species, generally those of economic importance, may be the only relics of the former ecosystem. Vegetation tends to consist of local mosaics of natural and transitional species interspersed with areas of cultivated or fallow land. Cultivation and the associated transitional ecotypes are now the dominant form of vegetation and land use. The period 1980-2000 saw some of the most persistent deforestation in Nigerian history and the environmental consequences are beginning to appear, with reduced river flows, siltation, flooding and erosion.

Vegetation and land use were visually assessed from the air during the National Livestock Resources Survey (RIM 1992). In the absence of any other reasonably recent and reliable alternative sources of information, this provides an objective assessment of vegetation and land use over the entire country.

Nationally, grasslands cover only 3% of the Nigerian land area. They are most common in Borno State (12%), around Lake Chad and south of its affluents. Extensive grasslands are also found in Taraba State, on the Mambila Plateau and the Benue floodplains, between Numan and the Taraba River; on the Jos Plateau; and in Benue State. A specific type of clay grassland plain, *firki*, is characteristic of northern and north-eastern Borno State. Locally these *firki* areas can be very extensive, and, because of their water retaining capabilities, constitute an important late dry season grazing resource.



Tree cover was classified as either woodland, or closed canopy forest. Woodland occupies 41% of the country, extending southwards from 11°15'N, to the Atlantic coast in the south-west, and to the edges of the Delta in the east. Substantial areas of this woodland appear relatively untouched, and indicate some potential for future development and exploitation. Woodland was sub-divided into open and dense types. Open woodland predominates in a band between 10°N and 11°N, extending in a spur south through the Yankari Game Reserve to the south-eastern edges of the Jos Plateau, and from northern Ondo into Kwara State. There is dense woodland in southern Taraba State, south-western Plateau, most of Kwara, the southern half of Niger State, western Oyo and Ogun, and in southern Sokoto, east of Zuru. Closed canopy forest covers only 6% of the country, and is concentrated in the southern states: south-eastern Oyo, central Ondo, western Bendel and Rivers. This category consists mostly of primary forest. Cross River is the most heavily forested state; much of it is apparently layered forest, though encroachment is accelerating. Layered forest also occurs in Taraba State, on the south-western escarpment of the Mambila Plateau, although it is threatened by extensive dry season fire penetration.

Nationwide, bare ground accounted for 3% of land area, most of which is found in northern Borno, Katsina and Sokoto States, and on the Mambila Plateau. Erosion was most evident in central Sokoto State along a band from Birnin Kudu, via Sokoto town to Gusau; in north-western Kaduna State, west of Birnin Gwari; on the Mambila and Jos Plateaux; north of Yola in Adamawa State, and to the north and east of the confluence between the Benue and Taraba Rivers; around the meeting point of Bauchi, Borno and Kano States; and in northern Katsina State, especially near Kukar Jangarai Grazing Reserve.

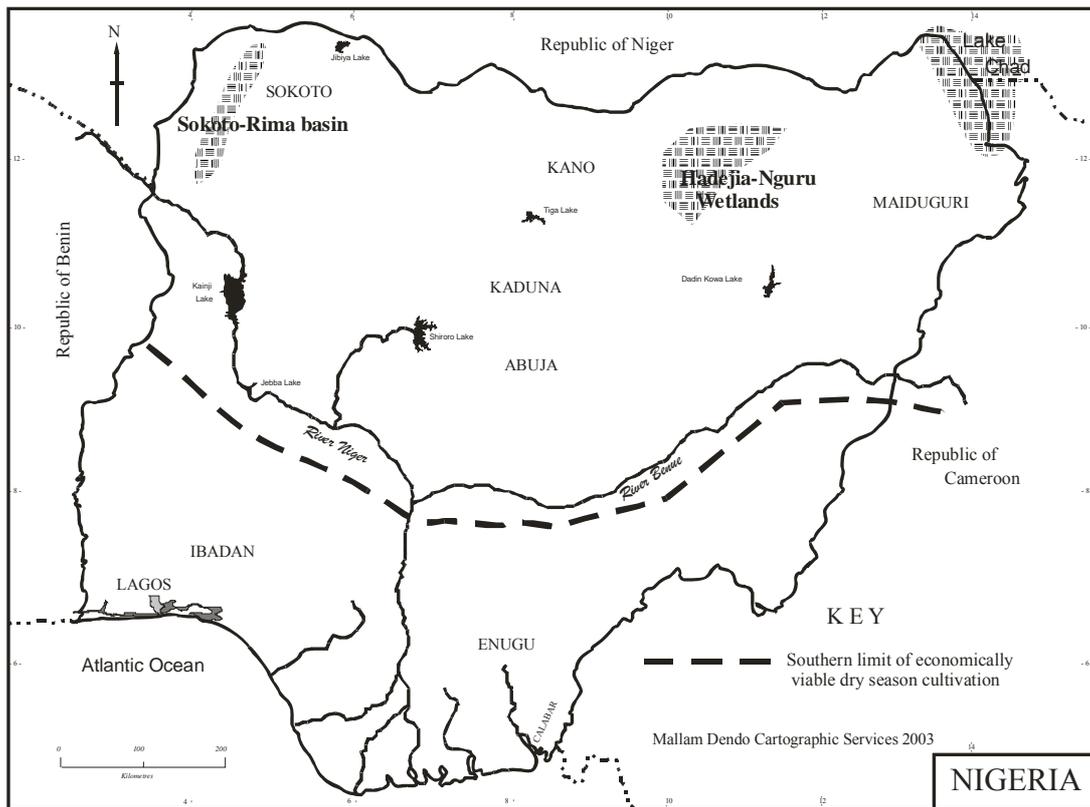
### 1.3 Fadamas, floodplains and wetlands

Much of Nigeria is semi-arid and subhumid and the country is generally well-watered with the Niger-Benue and Cross River systems located within its borders. This created large zones of pastureland attractive to herders; the only disadvantage being that gallery forest harboured tsetse and made the wetland areas unsafe in certain periods. For farmers, paradoxically, this rich resource was virtually unusable. Many low-lying areas adjacent to rivers were unexploited in Nigeria due to problems of disease, particularly malaria and river-blindness. Only in the drier regions of the north, such as along the Sokoto-Rima and Komadugu-Yobe systems was the North African *shaduf* used to lift water for horticulture. Map 3 shows the locations of the principal wetlands in Nigeria which are of economic importance for *fadama* cultivation.

The clearing of gallery forest along many waterways and improved disease control made many more wetland areas habitable. This coincided with a growing urban population in Nigeria, and an increased demand for fresh vegetables and staples. The availability of affordable small petrol pumps has conspired to transform this aspect of the rural economy since the 1970s. Originally promoted by the ADPs and first taken up on a large-scale by migrant Hausa farmers, the concept of irrigated contra-season farming through small-scale lift systems has diffused widely across the river-systems of North-Central Nigeria and constitutes an important element of the rural economy. Indeed it may be reaching a point where water abstraction, particularly groundwater, is now excessive and reports of dry boreholes are increasingly common.

Nonetheless, there are still many areas, especially in remote sites where the river floods remain barely exploited. Land hunger in the semi-arid zones has caused a major migration of farmers southwards, both seasonally and permanently. Many uncultivated areas in river flood-plains are now farmed by migrants leading to disputes both with their traditional 'owners', with pastoralists and with fishing populations accustomed to unrestricted access.

Map 3. Locations of principal wetlands in Nigeria



### 1.4 Cultivation

Nigeria exhibits a wide range of subsistence systems generally incorporating both pastoral and agricultural elements. Broad descriptive work on systems of cultivation is more generally available than detailed discussions of cropping systems. Although there are some plantations in the south and a number of large-scale modern farms throughout the country, these represent only a small fraction of the total agricultural output. Most farming is still in the hands of the traditional sector.

Despite the image of traditional farming as small-scale and low-yielding, in reality it has responded effectively to the requirements of a modern economy and a highly urbanised population. For this reason, farming systems in rural areas blend purely subsistence activities with a range of market-oriented strategies, most notably, the tillage of larger areas to produce surplus staples and the development of swamp, fadama and irrigation systems for horticultural products. Table 6 summarises the significant farming systems found in Nigeria;

**Table 6. Principal Farming Systems and their Distribution in Nigeria**

System	Features	Distribution
Flood retreat	Cultivation on alluvial soils, regularly under water, using residual moisture.	Coastal and deltaic regions, also Lake Chad
Forest farms	Mixed crops under forest trees.	Humid Zone
Savannah	Rain-fed agriculture; usually ridged fields; suitable for animal traction.	North-Central Regions
Dune-foot	Wide-spaced cereals between sand dunes.	Along northern border
Firki	Residual moisture on clay plains; banded fields.	West and south of Lake Chad
Farmed parkland	Continuous cultivation under economic trees; manure maintains fertility.	Around larger northern towns
Montane	Terraces, continuous cultivation; manure maintains fertility.	Along Cameroon border and on the Jos Plateau escarpments
Swamp	Riverine, based on natural flooding.	Along major river systems
Dry season gardens	Riverine, using irrigation and shaduf/ pumps.	Along major river systems

All types of intensive production, particularly flood-retreat cultivation, swamp cultivation and irrigated horticulture, have undergone a dramatic expansion in recent years to feed the expanding urban populations. This has been correlated with a gradual transformation of land tenure systems from community or inalienable ownership with no rights to individual sales, to personal ownership with the exchange of land for cash or goods. Some 31% of the Nigerian land area fell within the cultivation cycle of which 70% was under active cultivation during the 1990 wet season, or 23% of the country as a whole. Between 55-60% of Kano and Katsina States were under crops.

All farming systems exist in a dynamic relation with the surrounding bush. Forest trees are a source of firewood, browse, fruits and other economic products and particular trees may be owned in otherwise untilled land. As the farms expand further into the bush, farmers must compensate for the loss of economic products, especially through conservation of economic trees; hence the evolution of farmed parkland.

Cultivated land falls into one of three broad categories: parkland - cropped land studded with trees, such as locust tree (*Parkia biglobosa*), and baobab (*Adansonia digitata*); palm parkland - cropping containing remnant or planted palm trees; and open - farmed land with few or no trees. Parkland is by far the most widespread of the three, and is found throughout the country except for in central and northern Borno State, on the Mambila and Jos Plateaux, and in the Niger Delta. Palm parkland is effectively restricted to the southern third of the country (Humid Zone), though outliers are found on some of the major watercourses in the north. Open cultivation, although widespread, is comparatively rare, and is limited to the Jos and Mambila Plateaux, along the Benue River in Taraba State, northern Sokoto and Kano States, and a band stretching from Potiskum to Bama in Borno State.

The expansion of cultivation, and the associated bush clearance, is only one of the environmental consequences of the rising human population. Others include the increasing exploitation of natural woodlands for fuel, particularly in the north; and a reduction in the availability of grazing land to pastoral livestock. Over-exploitation of one sort or another, especially in areas with irregular rainfall, high livestock populations or intensive farming, is leading to increasing degradation and erosion.

Changes in the extent and distribution of natural vegetation have affected the tsetse fly (*Glossina* spp.), the primary vector of animal and human trypanosomoses. The history and socio-economic implications of disease control in Nigeria have been reviewed by Putt et al. (1980) who concluded that the severity and economic importance of trypanosomoses have declined over the years.

### 1.5 CPRs and natural resource conflict in Nigeria

CPRs (formerly Common Property Resources now usually Common Pool Resources) constitute one of the most vexed issues in development planning. Economists who dominate planning at higher levels are very persuaded by models of economic individualism and find it hard to incorporate the fluid and evolving nature of CPRs in their models. However, in much of dryland Africa, the patchy nature of resources has resulted in widespread and rich CPR systems which remain only partly understood and are changing rapidly under the impact of globalisation.

Broadly speaking, African systems of CPRs evolved in periods when resources were abundant, when forest, wildlife, grazing, water etc. were abundant in relation to the population exploiting them. Nigeria, for example, may have had a population of ca. 10 million in pre-colonial times, but now there are at least 120 million Nigerians. CPR regimes that were perfectly rational in a former era have now become very inappropriate in a period of rising pressure on resources and extended trade networks. When forests still covered large stretches of Northern Nigeria, open access to fuelwood was practical and indeed any other system unenforceable. Now that vast cities require fuelwood for the majority of their citizens and roads and transport networks can carry it there, traders can exploit customary access rights in pursuit of individual profit and effectively strip bare large tracts of land.

Apart from pressure by private citizens, however, governance issues play an important role in exacerbating inequities. Water was generally so abundant in the wetlands in pre-colonial time that it is doubtful that there was a conscious need to regulate access. A river-basin such as the Hadejia-Jama'are was self-regulating and water-sharing unproblematic. However, when the potential to engineer large-scale abstraction became a reality, it simultaneously fell to the nation-state to ensure that the CPR represented by the water in the river basin was shared equitably among the variety of downstream users. But governments both consist of elites and attempt to satisfy an elite constituency. They are moreover more likely to listen to urban rather than rural voices and the powerful and wealthy rather than the poor. As a consequence, all types of upstream water abstraction have been and continue to be put in place without any significant concern for the impact on downstream users. Even though there are now requirements for environmental impact assessments, these are at best cursory and have never halted any major engineering project in Nigeria. Similarly, government as regulatory authority has little impact on predatory extraction; although the effects of overfishing and deforestation are now well-known, licensing in this arena is simply an avenue of revenue collection, not an attempt to regulate the CPRs that forests and fish stocks represent.

### 2. Nigerian Case Studies

The main body Nigerian case studies consist of a series of studies conducted in wetland areas in 2003, where conflict has been reported and where further development of *fadama* resources is seen as likely. The case studies begin with an overview of the changing patterns of pastoral migration in Central Nigeria, which is at the root of increased conflict. The first area to be described is the Hadejia-Nguru wetlands, the largest single wetland area in North-Central Nigeria, where a DFID-funded project, JEWEL, is under way to enhance livelihoods throughout the region. Following that are edited version of a series of local studies in states across the Nigerian Middle Belt funded by the World Bank in relation to the Fadama II programme. The case studies conclude with a broader overview of cross-border issues in relation to mobile resource users.

In West Africa, farmers formerly associated pastoral peoples with large-scale military conquest. But with the coming of the colonial regimes and the collapse of indigenous states, conflict between farmers and herders took on a different colouring, becoming more associated with competition for natural resources. Descriptions of such conflict abound in the pastoral literature (e.g. Kaberry 1959; Hurault 1964, 1969-70; Prioul 1971; Gallais 1972, 1977; Awogbade 1983; Blench 1984, 2001; De Haan 1997; Van Driel 1999; Tonah 2000). Nigeria, however, presents a very special situation quite unlike other West African countries,

for two reasons; most notably the ambiguous prestige of pastoral culture particular to Fulbe pastoralists but also because of its large and comparatively wealthy population.

This book argues that the situation of pastoralists in Nigeria has long been distinct from other African countries but that it was still historically rooted in competition for access to land. Conflict was transformed by key changes attendant on the demographic and veterinary revolution of the colonial era and again by the flow of oil revenues from the 1970s onwards which increased the market for pastoral products. However, in recent years, Nigeria has been constantly racked by civil strife, particularly across the religious divide, and this has reconfigured herder/farmer conflict in new and striking ways. The absence of any concerted government response is a matter for concern in terms of rural development, but also because it is noted by the participants who take it as an opportunity to increase tension still further.

### 2.1 Regional Aspects of pastoral migration and increased conflict

At the heart of much of the pastoral conflict is the changing pattern of pastoral migration from the late nineteenth century onwards. The exact era when Fulbe pastoralists first moved into Nigeria is unknown, but it is generally assumed that they first arrived as nomads in the far north between the 14th and 16th centuries. During this early period they were almost certainly confined to a narrow strip along the northern border of what is today Nigeria. The factors preventing their southern expansion remain controversial, but it is likely that attempts to move south of this line would have resulted in major losses from the trypanosomoses. Before the spread of firearms in West Africa, human population densities were low and wild animal numbers still high. In addition, almost all river banks would have been lined with gallery forest, creating an ideal habitat for tsetse flies. This would have created a high level of tsetse challenge for the non-trypanotolerant zebu owned by the Fulbe herders (Blench 1993).

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

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

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

Equally attractive, however, were the high altitude grasslands, since disease risks were lower and pastures more palatable for the zebu cattle. The Fulbe began to settle the plains around the Emirate of Bauchi and to move up onto the grasslands of the Jos Plateau just prior to the colonial conquest (Morrison 1982). A parallel expansion in Cameroon at the same time led to the gradual colonisation of the grassy uplands and humid savannas throughout the nineteenth century (Boutrais 1974, 1986). During the 1880s and 1890s, these pastoralists in Cameroon began to move westwards again and to colonise the Mambila and Fali Plateaux (RIM 1984; Blench 1991).

The second impetus to southward expansion of pastoralists was the relative security of the colonial era. The threat of armed raids on grazing herds was largely eliminated, a factor which, according to Awogbade (1983 8-10), had kept the herds off the Jos Plateau until the colonial era. Once established on the Plateau, the herds had access to exceptional grazing because the river basins were unused in this era. The growth of entrepôts around the newly-created railheads and a parallel expansion of Hausa traders who created a market for dairy products and acted as entrepreneurs in the livestock trade created a flourishing pastoral society which by and large co-operated with the indigenous populations.

More controversial in explaining the process of pastoral expansion is the role played by disease. There is little doubt that zebu cattle are progressively threatened by disease in more humid regions -however, the exact diseases and factors responsible remain disputed. The colonial regime instituted both tsetse control measures and made available a range of new veterinary medicines. The tsetse control programmes themselves presumably opened new pastures, but effectiveness of these programmes has been questioned (Bourn 1983). Alternatively, the expansion of population due to improved human health and nutrition, combined with a 'peace divided' when peoples in the Middle Belt previously confined to hill settlements (a relic of the slave-raiding era) came down to settle the plains. This would have acted to eliminate both the vectors of the tsetse fly (by hunting out the wild animals) and the forest habitats (cut down for agricultural land). By the time of Independence in 1960, the Fulbe had begun to stay all year round in the derived savannah north of Qyo town and to line both banks of the Niger-Benue system, which suggests strongly that they perceived the disease challenge to be dramatically reduced.

During the decades 1960-1990 a new force began to come into play -the expansion of cultivation in the semi-arid zone. The semi-arid zone has always been more populous than the Middle Belt, as it was where the major towns central to the Hausa Emirates were located<sup>6</sup>. However, projecting back the census figure to the precolonial era suggests that the human population for the whole Nigerian region may have been as low as ten million in the late nineteenth century. Comparison with the 1991 figure of 88.5 million and the projected figures for 2004 of 120 million+ makes it clear how pastoralists and cultivators could have co-existed in the earlier period. As the pressure on arable land in the semi-arid zone increased, soil fertility inevitably decreased. Farmers were obliged to move to regions of uncleared bush or to increase their holding size, often a problematic strategy. This evidently tended to exclude the mobile pastoralists who traditionally treated uncultivated bush as common resource. Pastoralists were then forced to seek new pastures, either further south or in neighbouring West African countries.

The classic stereotype of Fulbe movement in the colonial period was a seasonal migration between the semi-arid north and the dry-season pastures along the Niger-Benue system (see, for example, Glover, 1960). As the rains gathered pace, the tsetse populations expanded and herders were driven back northwards. This was probably never entirely true as early records suggest. Nonetheless, there was an accelerating exploration of more southerly pastures and individuals discovered methods of remaining in these regions all year round. This section describes the factors responsible for the movement of the herders and the impact of Fulbe in the different regions of the south as well as summarising the movement to the towns of the traders and settled Fulbe<sup>7</sup>.

<sup>6</sup>see density maps in Barbour et al., 1982, based on the 1963 census.

<sup>7</sup>This section is largely based on relevant parts of the state reports in RIM (1992,III).

The movement into the south-west was markedly earlier than in the centre and south-east of the country for both ecological and religious/cultural reasons. The climatic regime of the south-west is such that the derived savanna loops southwards west of Oyo, almost reaching the coast in Benin and the Togolese Republic. This creates relatively open land without the high humidity associated with forest proper and therefore reduces the disease risk to zebu cattle. Combined with the ecology were cultural factors, particularly Islam. Islam is widespread among the Yoruba, and dominant in Ilorin and the surrounding area where the pastoralists first entered the region. Since almost all the Fulbe are also Muslim, the potential for establishing exchange relations with the local population was greater than further east. In regions where Islam has had virtually no impact, such as among the Igbo and Cross River peoples, relationships are harder to build and conflicts more likely to arise.

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

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

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

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

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

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

Further south, around Abeokuta, there appear to be two historical layers of Fulbe: residents who have been settled since the 1960s, and a second wave following the drought of the 1980s. During the first wave, some Fulbe were brought to herd cattle owned by Yoruba businessmen, but others came as transhumant pastoralists. They no longer have large herds of cattle, and have now established permanent farms on which they grow subsistence crops. They take on herding contracts with local Yoruba cattle owners, working in exchange for milk and a share of the offspring. Fulbe are at present permanently settled around Odeda and

Egbado. The second wave of Fulbe were not originally cultivators and they presently maintain large herds, selling stock and dairy products for subsistence. However, the gradual process of incorporation into the community is continuing along the same lines as in earlier periods. For example, 350 Fulbe families from Borgu moved into the Iwoye area to settle in late 1989. Land was allocated to them by the local community heads, relations with farmers are good and the Fulbe are beginning to build permanent houses.

The Lagos area consists of a complex of lagoons, swamps and a sandy beach area dominated by coconut palms. Although the maintenance of cattle under coconut palms is an established practice in East Africa, the humidity of the Lagos region was thought to preclude this in West Africa. But west of Lagos, the system of cattle production has been radically transformed since the 1960s by the arrival of Fulbe and Hausa cattle-owners, and the introduction of new breeds, the n'dama and zebu. There are two Fulbe camps on the coast, both near Badagry. They are occupied by related families originally from Mariga in Niger State who came to the region in the 1960s. They are integrated into the local community, growing maize, rice and coconuts and rearing livestock. Most of the cattle are now crossbreeds and are looked after by caretakers, rather than managed by their owners, who now prefer to concentrate on tree-crops. Fulbe without herds who have recently come to the area, and have herding skills, are willing to take on this work. A combination of larger size, the possibility of milking, and the availability of herders led to the adoption of n'dama in preference to pure muturu. A profitable cash crop, coconuts, and the economies of scale that flow from communal herding of small individual holdings (usually 1 to 6 animals) has stimulated the rise of caretaking.

In Nigerian nomenclature, 'The East' tends to refer to the area between Asaba and Abakaliki, although geographically this is the centre of the country. In comparison to the open savannas in the south-west, this region is distinctly problematic for Fulbe pastoralists, both because they are extremely densely settled and because of religious conflicts with the indigenous peoples. As a consequence, the influx of Fulbe came relatively late, and has been considerably less homogeneous than in the Yoruba areas. Although some Fulbe pastoralists made their way to the region north of Enugu in the 1960s, they left at the outbreak of the Civil War in 1967, and the present groups of pastoral Fulbe began to arrive in the mid-1970s. The usual impetus for such movement is the need for water and pasture, but clashes with indigenous farmers elsewhere (particularly in Benue and Cross River) have accelerated this movement.

The main Fulbe groups are the Daneeji from Sokoto, who are the majority, the Pagaya'en from Katsina, the Sisilbe and Bargu'en from Sokoto, and the Rahaji and Sirifa'en from Bauchi. Leaders are generally chosen from the Pagaya'en or 'King's men' from Funtua near Katsina. The Daneeji, who arrived first, own mainly white Bunaji cattle. The Sisilbe, the next largest group, have white Sokoto Gudali cattle.

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

Owerri and Umuahia have had little Fulbe presence until recently and no permanent settlement of pastoralists. The first Fulbe came south to the derived savanna land around Okigwe from Anambra in 1983, attracted by the better grazing land and rice residues as well as by the tolerance of the local authorities and crop farmers. The greatest inducement to remain so far south is the better condition of their cattle and the improved calving rate. The success of these ventures has stimulated experimental movement even further south. In the dry season of 1990, a herd was encountered grazing near Kaiama, not very far from the point where mangroves begin. Within Nigeria, one of the keys to the gradual insertion of pastoral nuclei in high-rainfall areas is the availability of drugs. To keep their stock alive in the humid areas, herders need access to

trypanocides and remedies for skin diseases such as dermatophilosis. By 2003, a number of herds had been established in the Port Harcourt area, grazing on wasteland and even motorway verges. The profits from the sale of cattle to the urban market are so high that the expenditure on drugs to protect the cattle is economically viable.

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

In the south-east, significant movements of pastoralists only began in the 1970s and 1980s. Northern Cross River is derived savannah, some parts of which are suitable for the herding of zebu cattle. In the colonial era, most animals destined to feed the towns were trekked to market, especially in regions without a railway. Information about the grazing in these regions came from Fulbe drovers who went to the towns to manage animals for the Hausa cattle-traders. The Pagaya'en clan was the first to enter Cross River from Makurdi and Wukari in 1954. All the northerners fled at the outbreak of Civil War in 1967, but soon began to return; by the 1970s there were communities between Katsina Ala and Ogoja. Although this region is not densely settled, relations between the pastoralists and the indigenous peoples were never good and at the end of the 1980s there were several major conflicts that led to the Fulbe fleeing westwards to the Abakaliki region (RIM 1989).

### 2.2. Changes in ecological adaptations

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

Even in the north, this trade has been declining as the terms of trade for milk against cereals have gradually worsened. In interviews in 2003, many Fulbe expressed the notion that selling milk was a waste of time, as prices were so low. In addition, the custom of wives exposing themselves to public gaze at the markets is seen as increasingly counter to a stricter Islam that is spreading everywhere through the region. The main reason for the declining prestige of dairy products seems to be the increasing prominence of other status products both for personal consumption and to be served to guests. In the nineteenth century, travellers such as Heinrich Barth were regularly sent calabashes of milk as gifts, a custom still retained on the Mambila Plateau. The expansion of soft drinks, and packaged food has largely replaced milk as a status food, although it is still bought and sold. Indeed, population densities around Kano have made fresh milk a very rare and expensive commodity and for the wealthy it has acquired a new prestige. Sugared, bottled yoghurt made from milk powder is widely sold in small shops reducing still further any requirement to buy the fresh product.

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

consequence has been that pastoralists, requiring alternative sources of income, have to sell the only other product of their herds -meat.

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

The Fulbe are conventionally treated as cattle pastoralists and there is some truth in the stereotype, both in sheer numbers and in terms of cultural values. Nonetheless, typical herds in the northern regions include cattle, sheep, goats, donkeys for baggage and occasionally camels for rapid transport. All these species are more or less susceptible to humidity-related diseases. Moving southwards, camels and horses are the first to be dropped from the herds, then goats, donkeys and finally sheep. The southernmost herds, especially those on the edge of the Delta and in the grass 'islands' in the humid forest consist purely of cattle.

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

Apart from eliminating goats and reducing sheep numbers, southward expansion has also led to changes in the breeds managed. There is a strong correlation between 'red' zebu cattle breeds, such as the Rahaji, Azawak and Wadara, and the arid and semi-arid zones (Blench 1999). These breeds are generally considered more prestigious by the pastoralists, and the evidence is that they are both heavier and better milk producing animals. However, they are notably less resistant to both nutritional stress and humidity-related disease. As a consequence, the general trend has been to switch to 'white' breeds, especially the Bunaji and these have now become the dominant breed throughout the subhumid and humid zones. This is usually achieved either by simply buying males of the preferred breed and gradually crossbreeding the herd, or by exchanging animals with pastoralists whose grazing orbit is more northerly.

Muturu or West African Dwarf shorthorn cattle were once widespread throughout southern Nigeria but are almost everywhere in retreat (Blench 1998a,b). In the past, many villages kept muturu cattle for ceremonial purposes. In the 1960s it was common to see them in villages and by the roadside. However, as human populations increased, the extensive grazing systems became disruptive to crop production and new by-laws in the 1970s requiring them to be tethered and fed by the cut-and-carry method. The principal advantage of muturu, their trypanotolerance, has less and less merit with the cutting down of the forest and the wide availability of trypanocides. As a consequence, all across the derived savanna, farmers are either ceasing muturu production or are exchanging their animals for Keteku (zebu x muturu crossbreeds) or zebu proper (Blench 1998a,b). This is linked to the employment of Fulbe graziers to look after the herds, replacing the children who used to manage the animals but now go to school.

### **2.3 Interaction with local populations: co-operation and conflict**

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

- a) Movement of pastoralists into fresh terrain, where language, religion, culture and landholding patterns are unfamiliar
- b) Increased desperation of pastoralists competing for a dwindling 'stock' of grazing land.
- c) The taking of power in Local Governments by indigenous farming peoples who not promote pastoralists' interests
- d) The collapse of the system of *burti*, or cattle tracks
- e) Widespread availability of guns and other weapons combined with a general breakdown of law and order in the country as a whole
- f) Increased size of herds due to greater access to modern veterinary medicine
- g) Greater internationalisation of migration with pastoralists from neighbouring countries making long-range movements to access subhumid and humid zone pastures

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

Blench (1984) discusses the patterns of conflict and co-operation in a limited region in Adamawa, and the contrasting relations between the Fulbe and their Samba and Mambila neighbours. Since the early 1980s, matters have continued to deteriorate for both communities and, in particular, the breakdown of law and order on the Mambila Plateau has led to the wholesale movement of Mambila and other ethnic communities such as the Nso into Cameroon. In 2000 there was a major episode of inter-ethnic violence with many lives lost and cattle killed, with the consequence that Fulbe herders fled, or converted their herds into cash.

Nonetheless, it is possible to integrate with the indigenous community and form a cohesive unit, as is evident from the situation in the south-west. The oldest stratum of migrants, the Borgu'en, have fully adapted to the local life-style and have become integrated into the local communities. Some groups of recent migrants are trying to build links with farmers before moving into the area, as in Iwoye. Another model of co-operation is provided by the growth of caretaking arrangements. Cattle represent an attractive investment for farmers and civil servants, especially with the continuing instability of the Naira. Fulbe herders were usually employed to rear the animals either separately or along with their own. This co-operation is not only with the settled Fulbe, but also the incoming 'nomadic' Fulbe who are often more willing to remain 'in the bush'. For example, in Faşola, west of Oyo and in Sooro, south-east of Kisi, caretaking arrangements have developed where herders take a proportion of the offspring in exchange for rearing.

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

## 2.4. The Hadejia-Nguru Wetlands<sup>8</sup>

### 2.4.1 Environment

#### 2.4.1.1 Hydrology and vegetation

The Hadejia-Nguru wetlands are situated in the Sahelian zone of NE Nigeria and have formed as a consequence of the Hadejia and Jama'are rivers encountering a series of fossil dunes aligned from SW to NE (Adams et al. 1993). The consequence has been the splitting of the rivers into multiple channels, the creation of lakes and seasonal ponds and zones of seasonally flooded land. The height of the floods was such that transportation was only possible by boat or foot and animals; the donkey as a pack-animal along the narrow *tudu* routes. Rainfall in the wetlands varies between 700 and 500 mm. annually, and despite strong local

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<sup>8</sup> This section adapted and updated from Blench (2003)

conviction, there is no evidence of declining precipitation. The basic soils of the wetlands are halomorphic and formed of deltaic alluvium, whereas the uplands surrounding the wetlands are non-leached ferruginous dune soils. Adams et al. (1993:14) following the LRD classification set out a tripartite classification;

- a. Wazagal Plain. *Acacia spp.* and *Balanites* scrub savannah with areas of *Ziziphus spp.* and *Guiera spp.*
- b. Nguru Plain. Sand plains with dum palms, and acacias, with *Aristida spp.* and *Schizachyrium exile* grass. Swamp grasslands with *Echinochloa*
- c. Hadejia/Katagum floodplain. *Guiera spp.* scrub savannah, *Mitragyna* on low hills, with *Vetiveria* and *Andropogon gayanus* in swamp grassland.

For the tree species, this classification is largely historical since extreme deforestation has taken out all but anthropic species in many regions. There are now large expanses of weedy neem (*Azadirachta indica*) in many areas, baobabs are extremely common and large clusters of coppiced dum dominate great tracts of land. Many of the swamp grasslands have dried up due to high levels of water abstraction and have been taken over by weedy species.

Biodiversity loss is probably responsible for the expansion and destructive impact of two major pests, the *quelea* bird (the black-faced dioch, *quelea quelea*) and the invasive cat-tail (*Typha*) grass. Many channels are now clogged with the *Typha domingensis*, an invasive species that took hold in the 1990s. These were cited in many interviews as the two most important issues for agriculture after declining flood levels and there is so far no satisfactory solution to either of these pest species. McCoy & Rodriguez (1994) represent a major review of worldwide strategies to eliminate cat-tail and conclude that at present, only mechanical crushing is effective; a strategy that has little chance of being implemented in the Hadejia-Nguru Wetlands.

### 2.4.1.2 Wildlife

The wetlands must once have been a major centre of large mammals and reptiles, and indeed, the breeding centres of crocodiles and manatees are still recorded in oral tradition. Kano Zoological gardens was set up with two young lions captured in the wetlands in the early 1970s. Duikers and jackals persist in remote areas, as does the occasional warthog. But the large mammals are long gone, for interviews now produce only vague and contradictory reminiscences. Comparable wetlands elsewhere in Africa, such as the Okavango swamps, are still important for wildlife. However, the wetlands is internationally recognised as a habitat for wintering Palaearctic bird species, particularly for Afro-tropical waterbirds. Very large concentrations were recorded in the 1970s and 1980s and over sixty bird species are known (Adams et al. 1993:15). But more recent censuses have recorded dramatic falls in numbers, presumably due to the decreasing areas of surface water. The crowned crane, *Balearica pavonina*, once emblematic of the wetlands, has now completely disappeared.

### 2.4.1.3 Fisheries

The most significant account of the fisheries of Northern Nigeria remains Reed et al. (1967). The Sahelian waterways of the Chad Basin contain numerous species and traditions agree that catches were abundant and average size of the fish large. The fish resources of the Hadejia-Nguru wetlands are still extensive, but the present-day diversity must be only a fraction of that which occurred prior to the Challawa Gorge impoundment. A survey by Jimoh (1989:2) recorded some nineteen species as regularly caught in the wetlands, but notes that a survey some fifteen years earlier had recorded forty-four species. Thomas et al. (1993) describe the fisheries of the Hadejia-Nguru wetlands as they appeared in the early 1990s and they show many similarities to Lake Chad. The start of the dry season is usually deemed best for fishing, as fish leave the flooded plains and return to the main watercourses. Nonetheless, increasing pressure has ensured that fishing takes place throughout the year. Very little modern fisheries gear is used; and most canoes are still not motorised; poison and dynamite are hardly used.

### **2.4.2. Pastoralism**

The extensive grazing lands of the Hadejia-Nguru wetlands are highly attractive to pastoralists, but the biting flies are a deterrent and most of the groups who entered them were seasonal visitors, retreating when the flood rises. Broadly speaking, there seem to have been resident groups who practised short-distance transhumance and who had at least some rapport with villagers from the early colonial period. However, the Sahelian droughts of the 1970s and 1980s and agricultural expansion in Hausaland lured more Fulbe to explore the wetlands and the 1990s saw a major influx of new 'stranger' groups. In particular, in the mid-1990s saw a particularly aggressive group of sheep-herders, the Udawa, moved into various parts of the wetlands. This is a significant reflection of the changing environment in the area, since previously sheep would have been too susceptible to footrot and humidity-related diseases to survive. Uda'en typically consist of single males with several hundred large Uda sheep, living in remote bush areas and largely avoiding settlements (cf. RIM 1991). The Udawa seem to be named for a sheepherding group, the Uda'en, who have historically moved through the dry zones. But these herders are reported to have red cattle and is likely that they are quite different, perhaps one of the Anagamba clans. Whatever the case, they seem to have undergone a major cultural change, whether through Islamic militancy or other factors. The effect has been dramatic; from 1995, many of these herders have gained access to modern weapons and seem prepared to use them at the slightest provocation. According to villagers, they deliberately allow their sheep animals to enter crops and the result has been a series of violent clashes ending in numerous deaths. A study of this situation in Bauchi State in 1997 (BSADP 1997) recorded some deaths and all the reports seem to suggest that this is continuing.

In a survey conducted by Hadejia-Nguru Wetlands Conservation Project (HNWCP) and Global Livestock and agricultural Services Limited in 1999, three pastoralist groups were identified based on their migratory movement. These include sedentary pastoralists, short-range migratory pastoralists and long-range migratory pastoralists. Among other clans settled around the wetlands include Jahunen, Beze'en, Bembe'en and Guddiranko'en largely found around Kajawai, Asurbum and Sugum. A number of other clans are scattered in and around the wetlands. The breeds commonly seen grazing around the uplands and fadama areas of the wetlands include Rahaaji, Sokoto Gudali (Bokoloji) and small number of Mbunaji. An estimated cattle population of 320,000 (RIM, 1992) may visit the wetland areas every dry season.

An intriguing development quite unmentioned in the literature is the appearance of Uled Suliman camel-herders. These are essentially a type of Saharan Bedouin, of Libyan origin, who moved into northern Niger and Chad in the 1930s. They were first reported in Nigeria in RIM (1992) and it seems they had been crossing from Niger since the 1980s. However, in the mid-1990s they began to migrate down into the wetlands during the dry season and have been coming in increasing numbers every year. They also bring large savannah goats. This is a powerful indicator of the desiccation of the wetlands; until recently the prevalence of biting flies and the marshy ground would have been a cause of high mortality among these breeds. So far they have maintained peaceable if distant relations with settled farmers, largely because camels tend to eat shrubby vegetation and thorns that do not grow on arable land.

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### Wet Season Grazing Areas (*dumille*)

The settled pastoral groups maintain permanent camps in the upland areas of the wetlands. However, interviews with pastoralists in Asurbum and Sugum confirmed that their cattle are sent to the Gamawa and Gumshi areas until the end of the wet season, to avoid humidity and the high incidence of biting flies. The youths (*kori'en*) move with the cattle while the elders remained behind to cultivate crops. Cereal crops are commonly grown by the pastoral groups. The semi-settled pastoralists on the other hand shift entirely to various upland grazing areas away from the wetlands during the wet season. There is only one grazing reserve (Gabargal) of 8000 ha within the wetlands established by the Jigawa State Government and some pastoralists are settled in the reserve all year round. Despite official protection it is encroached by crop farmers. There are several other small *hurmis* established by local government councils within the wetlands but they are not protected and are therefore also heavily encroached by crop farmers.

### Dry Season Grazing Areas (*sedille*)

The Hadejia-Nguru wetlands provide good resources for dry season grazing. The cattle of the settled pastoralists, semi-settled and long-range pastoralists and currently camel herders (Uled-Suleiman) all converge on the wetlands during the dry season. The long range pastoralists who come from various states of Nigeria and the Niger Republic, visit the wetlands for crop-residue grazing and go on to other fadama areas further south along the largely towards the southern parts and/or River Benue and other riverine areas. Other groups remained in the wetlands throughout the dry season. After crop-residue grazing, they return to accessible fadama areas or graze in the game/forest reserves and national parks despite the restrictions. Tree lopping (browsing) is widespread within the wetlands during the dry season, which has contributed to the elimination of common tree species.

### 2.4.3 Agriculture

Agriculture remains by far the most important source of livelihoods throughout the wetlands (ICRA 1992). The main types of agriculture can be classified as follows;

- a. Upland
- b. Flood retreat
- c. *Fadama* / valley bottom/ natural floodland
- d. Irrigated vegetable production

Photo 5. Irrigation channel with cucurbits



Originally, upland production of millet for home consumption was supplemented with wild rice collection with and traditional hand or *shaduf* irrigation for vegetables. Later flood rice cultivation started in a few locations. Cassava and garden eggs were produced for home consumption and as sources of petty cash. Flood rice cultivation probably began in the 1970s, its techniques brought from Kebbi and Zaria, and it is now the predominant staple produced in the wetlands. Calabashes and cotton were the major items of trade, although cotton has sunk into insignificance due to low world prices. Upland crop production has always played a significant role in production. The principal crops are sorghum, millet, beans and a type of melon (*Citrullus lanatus*) locally known as ‘cow melon’. Gourd production is also a significant economic activity. A few people engaged in making mats and rope for extra income. During those days access to the wetlands cut up with the establishment of the rains.

The floods were formerly so high that transportation was only possible by boat, foot and animals, particularly the donkey used as a pack animal along the narrow *tudu* routes. Few individuals depend entirely on agriculture for subsistence; fishing is the most important secondary occupation and almost all households also collect some wild resources such as dum palm leaves for sale. However, one of the most significant consequences of the drying-up of the wetlands is that agriculture plays an increasing role in household economy as fisheries become less productive.

True irrigated schemes are rare, but horticulture based on small petrol pumps is extremely common and continues to spread. Since the studies of the early 1990s there has been a major expansion of horticulture, focusing particularly on hot peppers and tomatoes. This is partly a consequence of relentless demographic increase in Nigeria and a growth of demand in the cities. The peppers are brought to smaller urban centres such as Nguru, Gashua and Hadejia, bulked up and then transhipped to major towns both North and South. Small pumps lift water from a river-channel and essentially replace the traditional *shaduf*, which is of considerable antiquity in this region. However, in recent years, however, groups of farmers have begun to club together to buy larger pumps that require hiring an individual to maintain it. They create and fill secondary channels that can carry water several kilometres, which requires significant water-sharing arrangements. This is locally known as ‘illegal channelling’ although prosecutions are not a significant deterrent due to the lack of interest of government officials and the remoteness of the area.

**2.4.4 Institutional background**

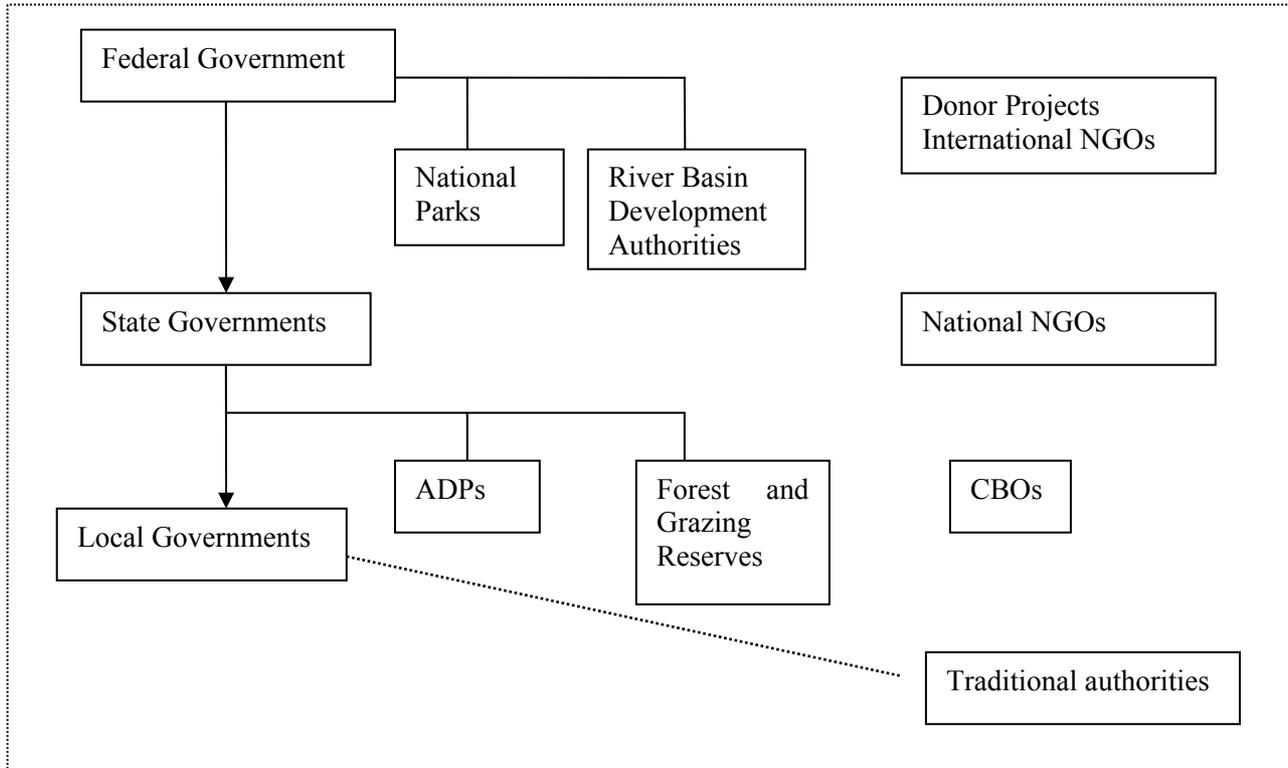
**2.4.4.1 Structures**

**2.4.4.1.1 Institutions**

The main institutional bodies relevant to the management of CPRs in the Hadejia-Nguru wetlands are the Ministries of the Federal Government, the River Basin Development Authorities (which are parastatals falling under the Federal Government), the State Governments (including the ADPs (Agricultural Development Projects) based in each state, Local Government, International NGOs and donor projects, national NGOs and CBOs (including informal associations based around traditional authorities). NGOs and CBOs do not form a hierarchy in the same way as government institutions. Broadly speaking, the HNWCP, UNDP, Sasakawa 2000 and JEWEL itself all fall into this category. National NGOs are notably the Miyetti Allah organisation representing Fulbe pastoralists, Al-Hayah representing the Shuwa and Koyam pastoralists, trade associations and other smaller groups. Local NGOs are typically the *Fadama Users'* groups found in many villages. Traditional rulers operate within the constraints placed on them by national government but are not formally part of the civil service.

The Hadejia-Nguru wetlands falls principally within Jigawa, Yobe and Bauchi States, but Kano and Borno States also have an interest in decisions taken concerning policy and are thus treated as stakeholders. The police and the army, who are relevant to conflict management are Federal, but the judiciary falls under the State governments. Falling under Federal and State institutions are a variety of PAs in the wetlands. This nexus might be broadly represented visually as follows;

**Figure 1. Visual representation of institutional structure**



**Federal**

Bade-Nguru Wetlands Sector of Chad Basin National Park. This includes;

Dagona Wildfowl Sanctuary	
Zurgum-Baderi Reserve	formerly a Forest Reserve
Gwaiyo Reserve Federal	formerly a Forest Reserve

These are supervised by Game and Forest Guards and are usually better-funded and enforced than State PAs.

**State**

□□□□	□□□□□	□□□□□□□
Baturiya Wetlands Reserve	Jigawa	
Yamdugu Forest Reserve	Yobe	
Gabargal Grazing Reserve	Jigawa	Funding from Federal to rehabilitate

State PAs are supervised by park wardens.

**2.4.5 Survey and inventory of issues concerning CPRs in the wetlands**

**2.4.5.1 Global and national CPRs**

CPRs are increasingly seen as referring to a broader arena than the simply national. The Hadejia-Nguru wetlands is registered as a RAMSAR site and is important globally as a centre for breeding birds and fish and plant biodiversity. It is therefore in some sense of world significance, part of the heritage of the world’s people, not simply the property of a nation-state to dispose of at will. Using this conceptualisation, Nigeria is the steward of a global resource, and indeed it has made a commitment on paper to protect that resource. In practice, it is hard to point to single action that has enhanced the wetlands and many that have accelerated the deterioration of conditions there. Hence the conflict between the international community, perceiving such zones as a global CPR and the nation-state treating them as private property. This is illustrated all too graphically by the recent<sup>9</sup> announcements that the Federal Government has expressed its intention to go ahead with further impoundments, the extension of the Kano River Valley Project (KRIP II) and the Kafin Zaki dam in Bauchi which will virtually extinguish the wetlands and bring to an end the production systems of its inhabitants. Even abstraction for urban water supply to Kano, which cannot be avoided could be made substantially more efficient<sup>10</sup>.

The confrontations that continue to occur over access rights illustrate very well the competing conceptualisations discussed here. The following section includes both statutory instruments relating to and customary rights of access to CPRs in the Hadejia-Nguru wetlands.

**2.4.5.2 Statutory instruments relating to the CPRs of the Hadejia-Nguru wetlands**

The following listing of statutory instruments was compiled by workshop participants. In addition to Federal and State, Local Governments have also passed numerous by-laws, but no listing of these is at present available.

<sup>9</sup> During the month of February 2003, newspaper articles appeared with the announcements of both these schemes. A common argument for Kafin Zaki is that the wetlands are only interesting to expatriates and then only for the birdlife.

<sup>10</sup> See HR Wallingford (2002), a report which also lays out the complete disregard of the consequences for rural people when taking action to secure urban water supply.

**Forestry**

□□□□□□□□□□ □□□□	
<b>Federal</b>	
Forestry Law of Nigeria	1938
Northern Nigeria Forest Law	1946
NA Forestry Rules	1945
<b>State</b>	
Jigawa Tree Planting	1994
Bauchi Forestry	2002

**Wildlife**

□□□□□□□□□□ □□□□	
<b>Federal</b>	
Wild Animal Laws	1963
Wild Animal Laws Amended	1975
National Parks Decree No. 36	1991
Federal Decree	1999
<b>State</b>	
Bauchi	1981
Kano	1985

**Fisheries**

□□□□□□□□□□ □□□□	
<b>Federal</b>	
Fisheries Law	1982
<b>State</b>	
Jigawa	1994
Kano	1987
Bauchi	1998
Borno	1996

**Environment**

□□□□□□□□□□ □□□□	
<b>Federal</b>	
Environmental Protection Law Decree No. 45	1988/1989
Environmental Impact Assessment Decree No. 82	1992
<b>State</b>	
Kano Bush Fires	1988
Jigawa	1992

**Livestock**

<input type="checkbox"/>	
<b>Federal</b>	
Grazing Reserves	1965
<b>State</b>	
Kano	1987

**Other Federal Decrees**

<input type="checkbox"/>	
Land Use Decree	1978
Pollution Control Decree 46/8	1990
Water Decree	1992

**2.4.5.3 Examples of customary rights of access to CPRs in the Hadejia-Nguru wetlands**

**2.4.5.3.1 Wild resources**

The key wild resources of the Hadejia-Nguru wetlands can be divided in plant, animal and mineral. Fisheries are a major category treated separately below. All others are of relatively minor economic importance, although some are of cultural importance such as dum palm leaves. Some general principles are operative in respect of wild resources. When a fixed resource (plant or mineral) occurs on the farmland of a household, members of that household have primary access. This can be ceded to others either by permission or through payment, for example in the case of potash or economic fruits. Where these occur in the wild, they are freely accessible. However, the establishment of Forest and Game Reserves has in principle cut off access within Protected Areas. In practice, wild resources can still be accessed; those of minor economic importance are tolerated whereas important resources such as grazing are the subject of conflict; pastoralists are desperate to enter reserved areas, and the authorities treat this as a major opportunity to extract payment, sometimes backed up by harassment. at the end of this section tries to synthesise this situation.

**Photo 6. Chad Basin National Park sign**

**2.4.5.3.2 Plant resources**

**Fuelwood.** The wetlands must once have been rich in floral biodiversity, and supported a large and diverse tree population. Nigeria’s urban population depends largely on fuelwood for cooking; the switch to fossil fuels or renewable sources has yet to occur. The quest to supply this market has resulted in highly efficient extractive industries, involving fuelwood gathering in both Protected Areas and outside and sale to entrepreneurs with trucks coming from Kano and other urban centres. Cline-Cole et al. (1988) showed very clearly that strict customary regulation tree-cutting in the immediate area around



Kano has forced dealers to look for remoter regions where control over access to resources is more ambiguous. Either the fuelwood dealers enter the PAs directly with hired labourers or they make agreements with villages adjacent to the PAs to supply them with firewood. Jimoh (1989) undertook a fuelwood survey

in 1988-1989 and England (1993) studied fuelwood in the Gwaiyo Reserve. Jimoh sampled thirty villages and found that thirteen were already travelling over 6 km. to collect fuelwood. Key fuelwood species such as *Khaya senegalensis* and *Anogeissus leiocarpus* had already vanished in the late 1980s, and he records *Acacia sieberiana* and *Mitragyna africana* as the most favoured species. In many areas, these two have now disappeared and coppiced neem (*Azadirachta indica*) and prosopis (*Prosopis juliflora*) are the dominant species although they make poor firewood. As a consequence, the more diverse tree species found in Protected Areas and Forest Reserves are highly attractive. Outside reserves, fuelwood is open access. Although the tradition is that dry wood is gathered and live trees left growing, in recent times cutting live trees has become common.

**Browse.** Pastoralists, especially the Fulbe who herd Sokoto Gudali cattle, depend heavily on browse in certain seasons, especially at the end of the dry season when the grass is finished. Herders climb trees and lop off the branches for the cattle and goats below. This practice can be non-destructive but where the appropriate species are short and the herds are large, trees are cut so heavily that they subsequently die. Cutting trees for browse within PAs is very common because it is hard to police. A particular case of resource conflict can occur over the dum palm (see next heading). The dum also acts as an emergency resource in times of feed shortage for livestock; the trunk can be chopped or burnt off and the meristem exposed, which cattle will eat. In an episode well-known locally, a group of Fulbe entered the Baturiya Wetlands Reserve in 1998 and cut up a large number of dum palms to the intense annoyance of local populations depending on the palms.

**Dum palm leaves.** The dum palm (*Hyphaene thebaica*) is part of the natural flora of the region, but selective protection has made it now locally common. Its leaves are used for weaving mats and it can be coppiced so that the leaves can be harvested regularly at ground level, rather than by climbing the tree. Leaves from the mature tree are less use for mat-making but can be used as a roofing material. They are not usually traded outside the region. It is not uncommon to come across large areas of coppiced dum palm, which, if well managed, can last for many years. There has been a recent expansion of the market for dum palm leaves (*kaba*) with the opening of a factory in Sokoto which produces ceiling tiles. By and large, dum growing on an individual's farm is deemed to be the property of that individual whereas, dum growing in the bush is open access. Over-exploitation of coppiced dum close to villages is often said to cause leaves to lose their strength. Migrant cutters from Niger Republic, Kano and Sokoto come every dry season and set up camp in areas bordering the PAs. It is considered a courtesy for mobile dum-palm leaf extractors to ask permission of the local Bulama or other authority but where this can be by-passed when the collectors go in to Protected Areas.

**Sedge** (*Cyperus rotundus*). The collection of nutgrass to make perform from the roots is a traditional industry that has long been recorded in Hausaland. It is gathered by the riverside, bundled and sold to wholesalers in major towns. Unfortunately, competition from industrially manufactured perfumes has driven down prices and many interviewees stressed that it is declining in importance, as the processing time is relatively long. Nutgrass is generally considered open access, although it is considered courteous for migrant collectors to make a nominal payment to the village head.

**Wild fruits.** In a biodiverse environment, the collection of medicinal plants and wild fruits is often of considerable significance to the community. Outside individual farms, these could be collected freely in bush areas. In recent years, falling water levels and the declining nutritional status of communities has increased the importance of wild fruit collection and species such as *dinya* (*Vitex doniana*), *goriba* (*Hyphaene thebaica*), *aduwa* (*Balanites aegyptiaca*), *kurna* (*Ziziphus spp.*), *kanya* (*Diospyros mespiliformis*), baobab (*Adansonia digitata*) and tamarind (*Tamarindus indica*) are now much sought after. Of these, only *goriba*, the fruit of the dum palm is traded long distances and every dry season buyers come from Kano and buy sacks of fruits from villagers. In theory, fuelwood collectors are supposed to leave such economic trees, but it seems that the value of wood is such that they are being cut down in remoter areas. Despite the unsustainable nature of this, the difficulties of the customary CPR regime make it difficult to enforce any sanctions against the cutters.

### 2.4.5.3.3 Animal resources

#### Photo 7. Animals smoking at Nguru market

Since the disappearance of large animals, the only species that seem to be regularly caught by hunters are various rats (*Cricetomys* etc.), squirrels and the monitor lizards (*Varanus* spp.) which can be seen being smoked on market days in small numbers at urban centres such as Hadejia and Nguru. There appears to be little or no control on this trade and all animals appear to be open access.

Elsewhere in Nigeria, non-fish aquatic resources, such as shellfish, frogs, crabs and snails are highly prized and heavily exploited. But in the wetlands they are mostly considered not fit for consumption and do not appear in



the markets. Whether this is somehow related to Islam is unclear. But it creates, as it were, an open niche, and this is exploited by Tiv people who come up from Benue State just before the rains and capture very large number of amphibians which are smoked and sent South. Since this resource is not locally exploited, frogs etc. are considered an open access resource.

There seems to have been a small amount of local trapping for consumption but the opening up of the Nigerian economy has made it apparent to outsiders that the waterbirds are a major economic resource. Wildfowl are caught by hunters principally for sale to smokers, but there is a small trade in live birds for the exotica trade. Typically, these are storks, spur-wing geese, ibises, egrets and jacanas. Kano remains a major centre for dealing in live animals, despite persistent complaints both about the rare animals sold and the malign conditions under which they are kept. Hunters by and large originate from external communities and most resident groups deny being involved in the bird trade, although they almost certainly snare small number of birds for local consumption. Professional hunters target migrations and well-organised individuals can kill as many as 2-300 in a single expedition. Regrettably, the prices they receive for these birds are very low, with as little as ₦30 per Abdim's stork being recorded in 2003, providing an even greater incentive to kill as many birds as possible. Apart from professional hunters, there are also sport hunters, military men, expatriates and local government officials coming from urban centres with high-powered rifles to kill birds for amusement. Birds appear to be completely open access with communities feeling they have no ownership over birds and that hunters are free to act. In view of the practice of using chemical poisons to kill certain species, this is unfortunate. There is an incipient change in attitude visible at Dabar Magani, the village where incipient ecotourism is being practised. As small numbers of tourists come to hire boats and guides to visit bird concentrations, hunters are being excluded for economic reasons. This is far from nascent environmentalism, however, and is unlikely to spread.

**Photo 8. Pickup carrying kanwa sacks**

**2.4.5.3.4 Mineral resources**

A major economic development in the wetlands has been the evolution of potash extraction during the mid-1990s. Potash (*kanwa*), considered essential in Nigerian cooking, has traditionally come from sources in the Sahara, and was brought to markets on the edge of the desert by camel trains, thereby becoming correspondingly expensive. But potash can also be extracted by evaporation from many sites in the wetlands and this has rapidly developed since about 1996. It is now a common sight to see buyers coming to villages and removing entire pickup trucks of sacks of potash for wholesale in markets such as Nguru. Ironically, the availability of potash is probably connected with the desiccation of the wetlands, as crusts of potash appear on dried-out floodlands. Although obviously, individual householders have primary rights over potash extracted from their own land, most communities stressed that potash collection was open access, and that unlike more traditional extractive industries practised by migrants it is not customary to pay even a nominal fee to the local ruler.



**2.4.5.3.5 Fisheries**

Fisheries, although technically a wild resource, constitute a category of their own. Access rights in fisheries are strongly related to the nature of water flow. Only when a fisheries resource can be clearly demarcated, can access be demarcated. The most significant aspect of this is the ponds that form every dry season in certain zones. When the flood falls, large ponds, often rich in fish, occur in roughly the same place every year. These ponds eventually dry up, so they can be fished out, as the fish would otherwise die anyway. The Bade people, in particular, consider these ponds to be owned by individual households, who have absolute rights over them, and can sell or give away the fisheries rights. Ownership was passed down in families. In a time of abundance, such rights are not considered troublesome since even poorer fishermen can still gain plenty from the main channel. In recent years, owners of fishponds have been selling them through a sort of auction process, with the buyers often commercial operators from the Sokoto region. The alienation of these fish resources to outsiders has been the source of resentment to local fishermen, especially as catches are falling. Hence increasing reports of poaching in the fish-ponds and conflicts between indigenous populations and migrant fishermen. Declining floods are causing many ponds to disappear, but even where they persist, it seems likely that the traditional ownership regime may collapse.

The situation in villages along the Nguru-Hadejia road, where waters are rising every year has created a curious inversion of tenure. Many ponds have disappeared completely, swamped by high water and with them the customary ownership pattern. Fisheries has become almost completely open-access, with the waters free for all. The consequence has been to attract numerous migrant fishermen from outside the area.

Another consequence of an open-access system was that fishermen felt free to make use of increasingly extractive techniques, even when this would deny downstream villages of fish that would previously have been generally available. This is particularly a source of friction in the case of *dumba* fish-barriers. The *dumba* are fences of mats stretched across main channels that effectively block all but the very smallest fish from passing. Villages further downstream see their catch significantly reduced and some species disappearing altogether. The abundance of fish in a previous era meant that villages were not induced to make use of such unsustainable techniques so customary access rights did not have a remedy for this. In some cases, villages have resorted to direct action, going by night and destroying the *dumba* mats. Elsewhere, they have appealed to the local government to resolve the issue, but this proved ineffective (p.

36). This is a case where customary systems have no remedy and the weakness of local government is revealed all too clearly.

#### 2.4.5.3.6 Water

Water is a CPR, but its omnipresence in the traditional regime meant that access was not generally a problem. However, with the beginning of the damming process, as water began to go short, it was gradually apparent that it was a resource that had to be competed for. There are some formal irrigation schemes in the wetlands, but the main source of abstraction is what is known as ‘illegal channelling’. Horticulture based on small petrol pumps is extremely common and continues to spread. Small pumps lift water from a river-channel and essentially replace the traditional *shaduf*, which is of considerable antiquity in this region. In the 1980s, migrant farmers from Kazaure set up camps in remote areas and began the commercial production of vegetables, especially hot peppers. Since the studies of the early 1990s there has been a major expansion of horticulture, focusing particularly on hot peppers and tomatoes. This is partly a consequence of relentless demographic increase in Nigeria and a growth of demand in the cities. The peppers are brought to smaller urban centres such as Nguru, Gashua and Hadejia, bulked up and then transhipped to major towns both North and South. As water became short, they the farmers began digging channels and purchasing ever more powerful pumps to bring water to their crops. These technologies have now spread to resident communities and in recent years groups of farmers have begun to club together to buy larger pumps that require hiring an individual to maintain it and to fill secondary channels that can carry water several kilometres. These require significant water-sharing arrangements and these have evolved remarkably quickly, given that they have no ‘traditional’ precedent. Although illegal channelling is prohibited by Federal Decree 101, prosecutions are not a significant deterrent. It is hard not to sympathise with the farmers digging the channels, although the consequences for downstream farmers can be disastrous, since their floodlands dry up and the water tables fall. As with *dumba* fisheries, traditional CPR rights did not evolve to deal with these long-distance impacts and the state is too weak to fill the lacuna thus created, thus significantly increasing inequity in the region.

A secondary consequence of channelling is that the ditches often cross transversely traditional stock-routes and access to riverine pastures. This has recently been the source of conflict, with cattle breaking down the edges of ditches or polluting the water and farmers taking action against the herders. Such conflicts are probably easily resolved by creating fixed crossing points, or perhaps creating small bridges across the ditches but the present climate of tension is such that these solutions are not in place.

#### 2.4.5.3.7 Agricultural land

As with water, when the human population was lower, and market penetration limited, there seems to have been limited competition for agricultural land. Families held floodland in the household, and upland farms were largely free access. Outsiders coming in could be granted land by the chief and indeed migrants were often welcomed. For example, the *Takari*, migrant fishermen from Sokoto, were welcomed and granted land because they understood the cultivation of floodland rice and could teach the local populations.

Increasing human population and changes in the hydrology, as well as increasing market demand for horticultural products, particularly hot peppers, have made competition for land a major issue in many parts of the wetlands. Rice floodlands have decreased in overall extent as have areas suitable for recession farming. At the same time, land watered by locally-dug irrigation channels has increased in value. As a consequence, land sales have begun to occur, in sharp contrast to the past, where land was considered vested in a corporate group such a household or lineage and thus not alienable. Outright purchase is still rare and tends to occur close to towns. However, it is likely to increase in the future and to be the subject of increasing disputes. The changing value of land following the hydrology has also permitted the development of a system of smoothing transactions, the land lease. First mentioned as beginning about fifteen years ago, i.e. in the late 1980s, it is now reported from a number of villages. A farmer agrees to lease a piece of land for a specified period, for example ten years, and the lessee pays either in cash or kind. This began as a fairly

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informal arrangement before the Village Head, but now there are semi-professional leasing agents who expect to make a commission on bringing together leaser and lessee. Indeed the leasing agents are known as *dilali* in Hausa, the term also used for cattle brokers.

Overall, thus, except in very remote areas, there is a transition from regarding agricultural land as a CPR to be allocated by the traditional authorities, to perceiving it as a valuable commodity, to be bought and sold like any other. This is a well-known transformation and has occurred in many other parts of Nigeria, especially around large towns such as Kano. However, the additional twist in the Hadejia-Nguru wetlands is that the unpredictable hydrology means that the value of land is liable to change from one year to another, so flexible systems develop to prevent farmers being trapped with the equivalent of negative equity.

### 2.4.5.3.8 Pasture

Pasture or grazing land is a major resource in the wetlands; every year the retreat of the flood leaves large stretches of fresh grass on the unfarmed floodland. As a consequence, it has long attracted pastoralists, notably the Fulbe. Prior to chemical fertilizers the pastoral herds were often welcomed on the farm after harvest, because as the cattle grazed crop residues they dropped manure, thereby fertilising the farms. In practice, many Fulbe groups formed long-term relationships with villages and had customary access to pastures nearby which they exploited every year. As pressure on resources has grown, and the use of traction animals has spread, both pasture and crop residues have become more valuable. In many cases, farmers now report charging Fulbe several hundred Naira for access to their fields after harvest, while those growing horticultural products are not keen to have the cattle enter their fields at all.

These difficulties have made the pasture in PAs distinctly more attractive and many Fulbe find it hard to understand why their traditional grazing grounds have been declared off-limits. They therefore enter anyway, and hence enter into conflict with the game guards. The issue can often be resolved for a small payment, but where relations break down, such as at Dagona, there are cases of arrest, the police are brought in and large sums of money change hands. Since there are no longer any large ruminants in the PAs, grazing by cattle and sheep may not be very destructive, certainly compared with lopping browse.

### 2.4.5.3.9 Synthesis

**Table 7** provides a synthesis of the access rights discussed in the Hadejia-Nguru wetlands;

**Table 7. Customary access to wild resources in the Hadejia-Nguru wetlands**

Category	Item	Customary access	Comment
Plant	Fuelwood	Open access off-farm	Dry wood can be gathered in PAs but cutting is in theory forbidden
	Browse	Open access off-farm	Forbidden in PAs but widely abused
	Dum palm	Open access off-farm	Forbidden in PAs but widely abused
	Sedge	Open access off-farm	Declining trade means little competition for this
	Medicinal plants and wild fruits	Open access off-farm	Deforestation is reducing supply
Animal	Wild animals	Open access	Forbidden in PAs but almost all species extinct
	Amphibians	Open access	Forbidden in PAs
	Wild birds	Open access	Forbidden in PAs but widely abused
Mineral	Potash	Open access	Widely available and not a source of conflict

The customary CPR regime of the wetlands was adapted to a low-density population and premised on its relative inaccessibility. The large-scale of the Nigerian economy and the growth of a network of roads and trade to the towns has made it possible for outsiders to exploit the ambiguities of the CPRs and engage in ruthless and unsustainable exploitation, leading to large-scale environmental degradation.

## 2.4.6 Conflict Management

### 2.4.6.1 Conflict management types and discussion of experiences of conflict management

All conflicts between subsistence producers are best settled by the traditional authorities according to almost all interviews. Only the traditional authorities have put in place any pre-emptive measures to try and prevent conflicts getting out of hand. Recourse to the police or army indicates a failure of the system. Nonetheless, this does happen, either because of weakness of the village head or because of breakdown of trust between mediators.

#### 2.4.6.1.1 Traditional authorities

In the settled communities, a hierarchy of village elders, ward heads, Village Heads and District Heads can be called on to settle disputes. Usually, the more senior the authority the greater the scale of damage. The main problem with the traditional authorities according to many interviewees was that their interest in these matters is highly variable. Some take strong action to set up court-like procedures, with witnesses, site inspection and independent assessment of the value of damage. Others make arbitrary judgments, and it is a common accusation that these are influenced by payment. Reports on this were either highly contradictory or else an expression of considerable local variation. In some areas, the pastoralists were always said to win cases because they were wealthier than farmers and could pay more. Elsewhere, judgements were always said to go in favour of farmers. Making a rough estimate, about three-quarters of the villages interviewed said they were satisfied with the traditional authorities. If complainants would not get satisfaction, their next step is usually to call the police.

The more forward-looking village heads have established pre-emptive measures; the slightly oddly-named 'Hospitality Committee'. These committees are groups of individuals nominated by the village head to go and meet with Fulbe who are coming to an area or who are setting up camp. Ideally, these are transhumants who have already visited the area in previous years and so bringing about meetings is unproblematic. However, in some cases, villagers must negotiate with a wholly unfamiliar set of pastoralists. The Committee tries to establish ground rules with the Fulbe, so that if crop damage or other disputes occur, then both sides have accepted an agreed procedure. They also have an indigenous version of a Resource User Agreement, essentially demarcating land where grazing is acceptable and warning off the herders from potential farmland.

In 2001, there were a number of serious cases of conflict between pastoralists and farmers in the region of Kadara, a small town in the centre of the Hadejia-Nguru wetlands. Usually these cases can be settled by the District Head, but in this case he was thought to be susceptible to financial inducements and his judgments were therefore unacceptable. As a consequence, one of the parties called in the police, who established a base in Kadara ostensibly to forestall violence between the two parties. However, the police soon learn that better money was to be made by expanding their extortion activities. Subsequently they began to collect payments from both farmers and pastoralists to 'protect' them from harassment. At some point an argument arose between the policemen over the division of the spoils. One became so angry that he shot his colleagues, set fire to their car and then shot himself. The burnt-out wreck of the car lay for a long time on public display opposite the mosque in the street in Kadara, before being removed in mid-2003.

#### Box 3. A burnt-out case

#### **2.4.6.1.2 Police/courts**

No cases were reported of pastoralists taking cases to the police; indeed they are natural victims because they are known to be able to raise money rapidly (Box 3). However, farmers do call the police when the traditional authorities failed them. In no example was the result satisfactory, and this stratagem is more a case of revenge, since once the herders are arrested they must inevitably pay considerable sums to be released from prison. However, the farmers often reported having to make payments themselves to ensure the police took action and very often subsequently not receiving compensation for damage to their farms. The courts seem to feature very rarely; these cases are usually settled before they reach this level.

Conflicts in PAs between officials and herders or other extractors such as fuelwood gatherers are almost always settled at police stations and occasionally these do reach the courts. Wherever herders enter PAs to graze and are caught by forest guards, they are often carried to the police station and sprung from jail by the intervention of pastoralist leaders. Similarly with other resource extractors although their limited capital makes the exercise less profitable. This is not really conflict management; indeed conflict is usually exacerbated and occasionally violence erupts between official and herder. The guards and the police are perceived as simply trying to extract money and using these incursions as an excuse.

#### **2.4.6.1.3 Army**

The army have no official role in conflict management at the local level, but some communities and local governments have called them in where civil insecurity has risen to unacceptable levels. But this is to usurp the role of the police and is highly irregular. The use of the army in settling conflicts is hardly to be recommended as their method is simply to threaten both sides with violent retribution if the peace is not kept. In Bauchi State, where armed robbery and murders in bush areas have become commonplace, the army appears to operate a shoot-to-kill policy. Needless to say, this is quite effective and was given hearty approval by beleaguered villagers. Certainly where resource conflicts have turned into situations of major civil insecurity it is hard to see what other response will be effective. Nonetheless, this is not a long-term solution.

#### **2.4.6.1.4 Local Government**

The only case where Local Government has been directly involved in access rights conflict management is with the disputes between villages over the setting of *dumba* fish-fences. In one case, local government organised a meeting between the affected villages and those setting *dumba* mats, and got an agreement to dismantle the fence. The fence was temporarily taken down until all the aggrieved parties had gone back to their villages. It was then promptly set up again. Cases like this, where customary systems have no remedy and local government no enforcement procedures reveal the weakness of using similar mechanisms. The issue is currently a 'hot' one and no system of resolution is in place.

#### **2.4.6.1.5 State**

No cases of state intervention were recorded in the surveys, but it was acknowledged that the State Government has played a role in issues where large-scale engineering was required. In particular, villages which complain that siltation of channels causing either floods or water shortage have appealed to the State government in the name of equitable distribution of resources. In theory, this is contrary to Decree 101, the Federal Decree that forbids diversion of water without Federal approval. In practice, however, State ADPs have been involved in earthmoving to try and divert channels, although apparently with very limited success.

On another front, the experience of JARDA (The Jigawa State Agriculture and Rural Development Agency) is best described as unfortunate. It was originally set up with a World Bank loan along with corresponding projects in the other thirty-six states of Nigeria. It was originally part of KNARDA, the corresponding agency in Kano State; when the states were divided, assets of KNARDA were partly transferred to JARDA. Nonetheless, it came into existence when the loan was coming to an end and has been largely a shell institution for some years, rather like the RBDAs.

Since 2000, however, JARDA has been involved in an exercise apparently calculated to alienate farmers. A plan was conceived by the Governor to build a sugar-cane crushing mill in Jigawa State. A consultant was employed, a site for the plant marked out and JARDA began to teach farmers to plant a Brazilian variety of sugar-cane deemed suitable for crushing. In 2001 the first crop was produced, but the factory was yet to begin construction. The project therefore bought all the sugar-cane from farmers but was unable to sell or store it. Optimism however continued because JARDA extended the number of farmers given material to plant the following year and was compelled to buy the crop again. It is now refusing to buy any more sugar-cane but at the same time has forbidden farmers to sell, uproot or burn their crops. Farmers wish to revert to staple production, but the variety of sugar-cane they have planted turns out to have an extremely powerful rooting system which is very difficult to dig out and really requires machinery. As a consequence, volunteer plants spring up whenever they try to turn their fields back to rice. The sugar-cane is of a variety that can only be crushed by heavy machinery, so they can cannot be sold for eating or to be crushed in the horse-drawn mills that produce the local *mazar kwela* brown sugar. Surreally, the advertising hoardings for the government claim the sugar-mill as one their successes and radio announcers talk about it as if the plant had been built. The parallels with the state statistics of the former Soviet Union are irresistible.

### 2.4.6.2 Conclusion

It is evident from this inventory that it is only the traditional authorities who really undertake conflict management. All other groups function simply to police disputes that get out of hand and usually end up leaving a trail of resentment and further aggression. Some institutions are distinctly predatory and are fairly ruthless in extorting money from their victims. Only the traditional authorities take any preventive action; the process is far from perfect but significantly better than any other and therefore a major target for reinforcement and strengthening.

### 2.4.7 Changing attitudes

#### 2.4.7.1 Attitude change among participants: the workshop process

The process of data collection in the Hadejia-Nguru wetlands included a workshop held in February 2003. Intended for all stakeholders, it was attended mainly by officials of state and local government. One expected outcome of the workshop process was changed attitudes among the participants. No survey was taken prior to the workshop, but the primary indications of the outlook of government officials can be gained from the opinions expressed during opening discussions. These exercises are highly problematic in Nigeria because a key feature of attendance is the payment of per diems, which allow officials to supplement their salaries. Generally speaking, those who make key decisions in Nigeria's top-down bureaucratic process are far too busy to attend workshops. Attendees are compelled to submit to the exotic procedures of PRA or similar, which they generally treat with good humour, as yet another example of the incomprehensible customs of the inhabitants of Western Europe. Given these constraints, it is remarkable that donors attach so much importance to the outcomes of workshops.

Nonetheless, the workshop process is probably most useful in gauging the attitudes of officialdom at levels below the Federal. these can be summarised as follows;

- a. Some level of government is entirely responsible for action in terms of intervention in rural areas**
- b. The level of government represented by the individual participant has the most responsibility**
- c. Rural communities are in need of ‘enlightenment’ which can be provided by government**
- d. Consultation with communities and pastoralists is given no role since government has the necessary expertise**
- e. Problems are essentially technical**
- f. A highly optimistic attitude to enforcement of regulations, an assumption of probity on the part of government and a vagueness about sources of funding and other resources**
- g. [only apparent through hindsight] Government officials have little or no idea of the problems in rural areas**

As fieldwork proceeded, changes were apparent, especially in the recommendations produced for the final synthesis. Final discussions at the wrap-up meeting were even more illuminating, although the written recommendations were more cautious than verbal statements. The following list notes apparent changes in attitude and should be compared with the previous one. Some examples were;

- a. Government will need to work with a wider variety of bodies to design interventions in rural areas**
- b. Consultation with communities is essential**
- c. Many problems are institutional and political**
- d. All levels of government need to clarify their own responsibilities**
- e. There was a well-founded scepticism about enforcement of regulations, and realistic assumptions concerning official probity**
- f. A realisation that resources must be sought and earmarked**

Participants undoubtedly gained some insights into the problems in rural areas; indeed the degree to which they were shocked reflects the extent to which they are out of touch. Whether the workshop process leads to long-term change can be doubted; too much in Nigerian officialdom tends towards the conservative and the weakness of the NGO sector makes it difficult to challenge embedded practice. But final discussion with workshop participants did suggest that at least some progress had been made on changing entrenched attitudes.

A disturbing aspect of the final recommendations was JEWEL, the DFID-funded programme sponsoring the workshop, should make itself responsible for many activities. This may have been because part of the brief was to make recommendations for JEWEL. Nonetheless, it would be unfortunate if the effect of the workshop was to simply shift responsibility in participants’ minds from government to donor-funded project, rather than reinforcing the realisation that coalitions of stakeholders must combine to take action. It is easy to express a new frame of mind in the context of an encouraging environment such as a workshop; whether it can be sustained over a long period back in the more conventional environment familiar to the participants remains to be seen. To a certain extent this is in the hands of JEWEL; if it follows up with individuals to help them make good on their new insights then the long-term outcomes will appear more credible.

### 2.4.7.2 Recommendations

The following recommendations emerged from the data-oriented element of the workshop exercise;

1. It is apparent that workshops of this type produce prioritisations and recommendations from a certain type of state official. However, if JEWEL is genuinely to represent the opinions of all stakeholders then it will clearly need to find ways of sampling the views of a much wider range of stakeholders and also weighting their views using considerations of equity. There are perhaps 1.5 million residents of

the wetlands and large numbers of seasonal users, versus a few hundred local government, state and Federal officials with responsibilities for CPR issues.

2. At present, scientific input in JEWEL is at a minimum and considerable weight is given to stakeholder opinion, training and facilitation. But any type of action on issues such as hydrology, sustainable fisheries, bird pests and invasive species should be informed by the latest scientific opinion, which is clearly not accessible to government officials. Some way of bringing together scientific insights with stakeholder priorities needs to be developed. This cannot be achieved by bringing in an occasional international consultant *unless* local stakeholders also realise the place of hard science in decision-making and can therefore request appropriate expertise.
3. Interview fatigue has been expressed, with justification, by many communities and is likely to accelerate as environmental conditions deteriorate over the lifetime of JEWEL. Simply explaining to communities prior to interviews that JEWEL has no powers to implement will probably be a rather limited remedy. It is strongly suggested that JEWEL seek some solutions for local problems that will have a visible impact in the short term to make the process of longer-term goals more locally acceptable.
4. Attitude change among the participants over the span of the workshop was clearly evident. However, much additional backstopping will be required to institutionalise these new approaches. It is recommended that the project identifies key participants with the power to influence situations and follow up with them on an individual basis.
5. The workshop was held largely in English, village interviews conducted in Hausa. It should be remembered, however, that the residents of the wetlands are from four distinct ethnic groups, Hausa, Manga, Bade and Fulbe and that most interviewees were responding in their second language. There was considerable evidence that they would speak more openly to interviewers from their own ethnic group and workshop attendees had some direct experience of this in the case of Fulfulde and Bade. The project is therefore recommended to seek field staff able to command the major languages of the wetlands.

The Hadejia-Nguru wetlands, despite its world-level importance as a RAMSAR site, is undergoing rapid environmental deterioration, largely as a result of unsympathetic policies at the level of water impoundments and a failure to regulate predatory extractive industries. This in turn is because the benefits from these activities, such as fuelwood, water supply and peri-urban agriculture, are visible to an articulate urban constituency, whereas the destruction occurs in remote and inaccessible communities in other states. Extensive flooding in 2000 due to mismanagement of the impoundments led to widespread loss of life and property but no changes have been put in place to ensure that this situation is not repeated. All present evidence suggests that the situation will deteriorate still further in the next decade, as a consequence of the extension of the Kano River Valley Project and the possible construction of Keffin Zaki dam. The economic arguments against these developments would appear to be compelling and long since been set out in detail, but the relevant decisions are likely to be made on political rather than economic or even humanitarian grounds. On a small scale, these projects resemble much larger engineering enterprises in India and China, notably the Three Gorges dam, where the unwillingness of donors to criticise projects in countries that represent considerable markets for their products and the ability of the host governments to finance them from internal revenues allow environmentally damaging policies to go ahead.

Environmental stress leads almost directly to social stress; as resources decrease and human populations increase, migration and social fragmentation accelerate. Already there is strong anecdotal evidence for emigration from the wetlands and there is a corresponding increase in opportunistic exploitation of single resources by outsiders. Saddam Hussein drained the marshes of southern Iraq in order to destroy the traditional way of life of the Marsh Arabs; a virtually comparable act of environmental vandalism is taking place in the Hadejia-Nguru wetlands, not from malice but from a collapse in governance especially as it relates to common property resources in favour of unenlightened self-interest.

## **2.5 State studies for *Fadama II***

### **2.5.1 Introduction**

The World Bank has given approval for *Fadama II* (FII), an investment intended to follow *Fadama I* (1994-1999). The principal description of FII is found in the Project Information Document (World Bank 2003a) and the Project Appraisal Document (World Bank 2003b). The objectives are stated as follows;

The project development objective is to sustainably increase the incomes of **Fadama Users**-- the people who depend directly or indirectly on fadama resources (farmers, pastoralists, fishers, hunters, gatherers, and service providers);-- through empowering communities to take charge of their own development agenda, and by reducing conflict between fadama users. Fadamas are flood plains and low-lying areas underlined by shallow aquifers. They are found mainly in the north and parts of the middle belt of Nigeria (specifically along the flood plains of the Niger, Sokoto-Rima, Benue and Yobe river systems).

(World Bank 2003b)

However;

The first fadama project failed to adequately consider the needs of users of fadama resources other than settled farmers. As a result, conflict sometime broke out between them and pastoralists, who found their traditional routes to water and pasture blocked.

(World Bank 2003b)

A series of studies were undertaken between March and November of 2003, under the auspices of the Post-Conflict Fund of the World Bank, both to generate improved data on resource conflict in wetland areas and to provide case studies for training purposes. The major output of this field material was the conflict handbook presented in the first part of this book and a series of Powerpoint presentations used in training facilitators, a process which began in December 2003. The sections below present shortened and edited reports of the field studies by state.

### **2.5.2 Kebbi State**

#### **2.5.2.1 Conditions of the study**

The study in Kebbi State was undertaken between 7<sup>th</sup> and 15<sup>th</sup> of March 2003. Two regions were selected for detailed study, the fadamas around Birnin Kebbi, the State capital, and those on the east shore of Lake Kainji, based in Yelwa.

#### **2.5.2.2 Background and ecology**

Kebbi State is located in NW Nigeria and is oriented north-south, largely along the axis of the Sokoto-Rima river system with its southern edge marked by Lake Kainji. The completion of the dam at Lake Kainji in 1974 replaced a meandering network of channels and islands, and generated a major fisheries resource, which compensated for the decline in fish populations downstream. The social and ecological aspects of the creation of Lake Kainji have been described in a series of edited volumes (Mabogunje, 1973; Imevbore and Adegoke, 1975). The north of the state is semi-arid and the south subhumid with rainfall varying between 500-1200 mm. annually. The rainy season is from April to September with most rain in July and August, although the length of the season may vary by up to six weeks (Prothero, 1962). The *fadama* systems are very extensive. Most of the State consists of ferruginous tropical soils, except for the alluvial soils found in

the river valleys. The boundary between Northern Guinea Savanna and Sudan Savanna cuts across the centre of the State. The vegetation is now highly disturbed and dominated by anthropic species. In the north there are thorny species, with a scatter of *Acacia* spp., the desert date, *Balanites* and the toothbrush tree, *Salvadora persica*. The river courses are lined with dum palms, interspersed with a herbaceous cover of annual grasses. In the Northern Guinea Savanna zone broad-leaved trees and shrubs predominate, tree cover is denser and taller and the grasses are mainly perennial.

### 2.5.2.3 Human populations

Reflecting its north-south orientation, the north of Kebbi state falls squarely in Hausaland and is thus virtually monolithic in ethnic terms. Further south and east, however, the situation is highly complex with both numerous clans of the pastoral Fulbe and different fishing peoples, as well as the dryland farming peoples in the east of the state. Table 8 gives a summary of the some of the ethnic groups encountered in the survey;

**Table 8. Ethnic groups encountered in Kebbi State survey**

Local name	Language	Comments
Arawa	Hausa	Migrant fishing peoples, settled further north
Fulbe	Fulfulde	Pastoralists. Divided into resident and nomadic groups and further into numerous clans (see Annex A1a).
Gungawa	Reshe	Fishing people on the Niger and Lake Kainji
Jemani	Nupe?	Fishing people on the Niger and Lake Kainji
Kambari	Kambari	Farmers in drylands east of the Lake but fishermen on the lake itself
Kebbawa	Hausa	residents of Argungu region and further south towards the Niger
Kulukala	Sorko	Fishing people; migrants from Mali
Larawa	Laru	Fishing people on Lake Kainji
Lopawa	Lopa	Fishing people on Lake Kainji
Sarkawa	Hausa/Sorko	Fishing people on the Niger and Lake Kainji
Zabermawa	Zarma	Farmers in Kamba area but migrant fishermen on the Sokoto-Rima system

Between the many fishing groups there are numerous subtle differences, concerned with migratory practices, types of fishing gear used and social organisation. The fishermen usually cultivate a small patch of cereals but their household economy depends on the exchange of smoked fish for cereals. Many fishing peoples have two complete settlements, and migrate between them according to the height of the flood.

The exact era during which Fulbe pastoralists first penetrated the region is unknown, but by the early nineteenth century a distinction had already developed between the urban, settled Fulbe (*Toroobe* or Fulbe *wuro*) and the pastoralists (Fulbe *ladde*). One of the classic monographs of pastoral Fulbe in Nigeria (Hopen, 1958), concerns the clans in the Gwandu area and provides a more detailed description of the inter-relations of the established pastoral groups. The process of establishment in Kebbi State has continued up to the present and the pastoral zones are used by a great variety of Fulbe clans both from within Nigeria and from other West African Sahelian countries. The core Fulbe groups are the Sisilbe and Hausa'en, the herders of Sokoto Gudali cattle. The herders of Rahaji, the Dosanko'en, Gobiranko'en and Gwagwaraabe, tend to live further north, either in the Republic of Niger or on the border, and migrate seasonally into the south-central parts of Sokoto State. The herders of Azawak, such as the Kwananko'en and Borgu'en, live in the west of the State, or in neighbouring regions of the Niger and Benin Republics.

### 2.5.2.4 Subsistence systems

The farming systems of Sokoto State combine rainfed cropping of cereals and pulses with intensive river-basin cultivation along the Sokoto and Rima Rivers. The riverine areas have always been known for rice production<sup>11</sup> In the south, the ridge-based cultivation of sorghum is common, but in the drier areas, cultivation of millet predominates and ridges are replaced by simple dibbling of seeds and dune agriculture. In the north of the State, cereal yields are so poor that manuring of the land is essential to productivity, and the farmers compete to attract Fulbe herds on to their land in the dry season (Swindell, 1986).

#### Photo 9. Homa clap-nets

The fisheries of the Sokoto-Rima system and Lake Kainji remain extremely rich. Lake Kainji fisheries are described in detail in Reed et al. (1967) and Ita (1993). The dam, by backing up the waters of the Niger has created an expanded fisheries resource which has attracted fishing peoples from neighbouring countries and there is a complex interlocking system of exploitation involving traps, nets, hooks and spearing. There are in practice no controls on fishing except those enforced by the traditional authorities (Box 4) and Lake Kainji is being systematically overfished.



The pastoralists, the Fulbe (see Annex 1 & RIM 1992) divide broadly into two clusters, the long-term residents of the region and the long-distance transhumants who pass through during the dry season, exploiting the cereal stover on farms. Apart from cattle herders, there are Uda'en, highly specialised sheep-herders. Many of the narratives suggest that the pastoralists were the first inhabitants of numerous grazing areas along the fadamas; hence their dismay at being excluded today. All the resident pastoral groups do some cropping, principally sorghum, maize and millet, but still depend on milk and meat sales for subsistence.

#### Photo 10. Cattle on a stock-route near Birnin Kebbi

### 2.5.2.5 Experience of resource conflict

Resource conflict in the *fadama* areas of Kebbi State can potentially occur between four distinct groups, farmers, herders, fishers and resource gatherers. In the Hadejia-Nguru Wetlands almost all possibilities occur as friction between different groups of fishermen (Blench et al. 2003). However, the situation is very different in Kebbi and on present evidence, conflict between herders and farmers far outweighs all other issues. Unlike the Hadejia-Nguru Wetlands, gathering of wild resources is a very minor issue. There are no productive palm species, no hunting of birds or frogs and no gathering of potash. Unlike the Hadejia-Nguru Wetlands all fishermen are also farmers and are used to quite a structured regime of resource control. Fishermen, moreover, seem to have no tenure systems over aquatic resources; in sharp contrast to the Bade system of hereditary ownership of productive ponds.



<sup>11</sup> The sowing of rice 'on the waters' was recorded in Kebbi State by Leo Africanus in the 1560s.

Relations between farmers and herders in the north of Kebbi State are extremely fraught. Although Fulbe have traditionally grazed many areas for over a century, the valuable *fadama* areas have almost all been taken by Hausa farmers. The farmers accuse the herders of deliberately allowing their animals into the fields, sabotaging water supplies and breaking down fences while the herders make counter-accusations that farmers encroach the established stock-routes, and attack and burn their *rugas* (cornstalk houses). It seems fairly clear that these things do occur regularly. As a consequence, farmers have taken action to permanently exclude the pastoralists from *fadama* areas in a number of Local Governments, notably Kardi. Pastoralists have effectively no voice in these deliberations and have no skills to fight back against these patently unjust edicts.

**Photo 11. Interview in a Fulbe camp in southern Kebbi State**



That said, it is clear that many accusations have a basis in fact. The farmers claim that the Fulbe are using inexperienced children to herd the cattle along narrow routes where skilled herding is required. This is visibly true and there is little doubt that this is the source of much crop damage. Quite why the young men do not seem to be available for herding work is hard to determine. Pastoralists claim that farmers have encroached on the stock-routes and this is also obviously true.

A key issue is the amount of time crops are on the field. In the wet season, pastoralists usually withdraw to upland areas, often in the ungazetted grazing reserves. These are without facilities but the livestock will not be disturbed. However, when the rains end, the herders need to access the *fadamas* to graze and water their cattle. In the past, once the farmers took out their cereals there was free access to the residues and both parties benefited. Now, however, the farmers have extended their growing season, both by relay cropping and using new varieties and by pumping water. So when the cattle are released to drink at the *fadamas* they inevitably trample these late crops. The solution to this is relatively simple, in theory which is to develop the water and grazing resources in the reserves. However, the pastures have been so badly managed that it will now take considerable investment to restore them to usable state; and the investment and political will to do this is lacking. In an interesting contrast with the Hadejia-Nguru Wetlands, almost all conflicts are with resident Fulbe, the long-distance transhumants appear to pass by in the remote bush areas and rarely come into contact with farms. In the Hadejia-Nguru Wetlands, resident Fulbe usually have good relations with farmers and trouble seems to be created with long-distance migrants.

Much of the concern about resource conflict has gone into cases of clashes between herders and farmers and these are, as it were, 'headline' cases. The management of resources by the third principal group of occupants of the disputed spaces, fishermen, has gone largely unremarked. In some ways, however, fishing peoples provide some of the more encouraging examples of effective management of a limited resource. Box 4 describes the system of control of aquatic resources in Argungu Emirate.

Obviously, there are problems with this from the point of view of the secularist liberal agenda that drives typical development documents. The *Homa* and his councillors may take information from local officials but their edicts are 'top-down' and are enforced, when necessary, by policing. It probably also works because of the broader respect in which the Emir of Argungu is held by surrounding populations. Nonetheless, the system could not work unless it was generally sustained by assent from the fishing community, and more importantly, is seen to work. This is very much in contrast to by-laws passed by local government, for example on mesh size for nets, which are widely ignored. A key lesson to be drawn from this is surely that more account needs to be taken of existing resource use plans, no matter that they differ in shape from those proposed as interventions.

#### **2.5.2.6 Conflict management mechanisms in use**

The poor relations between herders and farmers in parts of Kebbi State make it very clear that whatever conflict resolution mechanisms are in place they are manifestly not working. The traditional authorities have tended to shy away from any involvement in mediation and therefore most cases end up directly in the hands of the police, who extract very large payments from the herders. The Emirate councils and some Local Governments have established Conflict Resolution Committees, but these are reliant on financial support and tend to fall in abeyance whenever funds are lacking. Perhaps more importantly, these committees do not seem to have either the capacity to analyse problems and develop strategies, the skills to play a mediating role or the authority to enforce decisions.. We were shown the resolutions that resulted from one particularly extensive process of meetings, which could be summarised by saying that all the parties should live in peace with one another.

**Box 4. Managing a sustainable fisheries resource: the case of Argungu**

The town of Argungu, some 40 km. north of Birnin Kebbi is know principally for its annual fishing festival. However, behind the festival lies an elaborate system of sustainable resource management that underlines both the functioning of existing strategies to keep resource exploitation to sustainable levels and dispute settlement procedures. The population of this region are Kebbawa, a subgroup of the Hausa and they are specialised fishing people although they also farm. The Sarkin Ruwa ('Master of the Water') of Argungu, also known locally as the *Homa*, controls a network of waterways in every direction from Argungu and is at the apex of a network of subordinate *Homas* in adjacent villages. Although appointed by the Emir, his position is always associated with a particular lineage. The Homa has three assistants;

Magajin Dankana	Sarkin Taru	Controller of fish traps
Kamba	Sarkin Mamari	Controller of hooks
Mai Ruwa		Deputy of Homa and responsible for enquiries

This committee is responsible for making decisions on fishing gear and for temporary prohibitions on particular stretches of water. In recent years the following fishing gear has been banned;

<i>birigi</i>	cast-net
<i>goro</i>	hook
<i>dalla</i>	dragnet
<i>dumba</i>	fish fences
<i>la<sup>o</sup>undi</i>	fish weirs

Other more destructive techniques such as poison, dynamite and 'shocking' the water with batteries have never been permitted. Catching crocodiles is now forbidden, although crocodiles are now so rare this is scarcely onerous. Apart from this, the water is divided into named stretches and decisions are made on the basis of catches to ban all fishing for periods of several months, most typically after the harvest until the flood falls in February/March. Although there are multiple distinct ethnic groups in the Argungu area, all accept the edicts of the *Homa*, otherwise their access would be rapidly curtailed. Individuals caught transgressing these prohibitions are sent to court and their fishing gear is burnt. The *Homa* said that observance of the law is the rule, that they only deal with a few cases every year. The consequence of this tough but well-structured regime is that fishing yields have scarcely declined in the region of Argungu, in powerful contrast to other regions in both Kebbi and elsewhere in Northern Nigeria, where yields are now a serious cause for concern.

(Interview with *Homa* and other committee members, Argungu 10/3/3)

One consequence of this is that consultative processes (for example those envisaged by the FII document) are not favoured; indeed the pastoralists explicitly rejected them. They took the view that there was no reason for the cultivators to keep to any promises they made in this type of discussion. Indeed, since the farmers have direct political power and the pastoralists none, this likely to be true. The view taken by the pastoralists was that government should simply decide where stock-routes were to be, demarcate them clearly and then enforce their use by pastoralists.

There were however exceptions to this: the community visited in the district of Aleiro indicated that conflict resolution was effective in that district and that the farming and herding groups had a peaceful and co-operative relationship. (Box 5)

**Box 5. Peaceful co-existence in Sabiyel**

Sabiyel is the largest ward in Aleiro Local Government in Kebbi State. There are 150-200 households with a total population of around 5000, predominantly farmers, fishermen/women, fish processors and settled FulBe. The migrant FulBe could be seen living on the upland, watering their cattle there with the help of hand-pumps. All conflicts are resolved amicably with the influence of the respected village head and the opinion leaders (men and women) and the support of the local government and traditional rulers.

The women in this community farm during both dry and rainy seasons. They sought support from the ADP WIA to organise themselves into an association registered with the state Ministry of Cooperatives, so they could benefit from the Fadama 1 micro-credit scheme. They obtained 30 water pumps and 30 tube wells were dug for them on the fadama. Since then they have repaid the loan. The pastoralist women, seeing the benefits derived by the women farmers, joined the association themselves. The women farmers make loans to the FulBe women and also their own husbands. Their peaceful co-existence has greatly brought about human development whereby the FulBe households leave their children behind to continue with their education, when their parents go on transhumance.

(Hadiza Giwa)

In the south of the state, the situation is extremely different. There are two reasons for this, the most important being that the human population density is much lower, and that pastoralists are interacting much more with fishermen than with farmers. The region around Lake Kainji and along the Niger is much less densely populated and access to the edge of the water is at present unrestricted. The fishing populations cultivate only very small fields and mostly do not make use of any type of intensification strategies. The pastoralists observed that when their cattle trample the crops the farmers frequently 'forgive' them, a state of affairs unimaginable in the north of the state. Moreover, traditional rulers appear to be much more respected in this area and disputes almost never reach the police or the courts. The Emir of Yauri has been particularly active in forming a series of committees to ensure that disputes that do occur are settled relatively informally (Box 6).

The situation is encouraging in Yauri Emirate, but it should be strongly emphasised that it pre-emptive conflict management planning is advisable. More and more farmers and pastoralists are being attracted to the area, in part because of the availability of land. As a consequence it is likely that the situation that is current in Birnin Kebbi will be repeated in Yauri in time to come. Pastoralists and fishermen should therefore be urged to formalise their rights of access as soon as possible, in order to forestall encroachment on their traditional lands. In addition, specific training in conflict management for committee members at all levels would clearly strengthen their work for the future.

### 2.5.2.7 Gender issues in Kebbi State

Women are also extensive users (directly and indirectly) of fadama resources. Fulbe women and children actually do most of the work with the herds: women do the milking in the morning before sending the children out with the younger cattle into the fadama for grazing and watering; the women then process at least half of the milk yield for yoghurt and carry it into town to the market, along with processed millet balls (*fura*). The Fulbe women (of all ages) gather together in one area of the market and this is an important point of informal association and exchange of ideas. Because of the lack of good grazing land in the dry season, the women use their profits to buy wheat bran as a supplement to fatten the cattle. Their own diet has changed, becoming more varied and nutritious, as they buy fresh vegetables at the market and have also begun to grow a wider range of crops (sorghum, cowpea, maize) in addition to the traditional millet. They have expanded into other income-generating areas such as guinea fowl, chickens and small ruminants.

In farming communities we came across examples of successful large-scale women's associations, involved in all areas of cultivation, processing and marketing. They have association bank accounts and make loans to individual members, their husbands and neighbouring pastoralist women. Greater equality / cooperation between women and men appear to exist in communities which have recognised the need for diversification of income generation. These communities also seem more likely to extend co-operation outside to other groups.

#### Box 6. Conflict Resolution Mechanisms in Yauri

On his installation, His Royal Highness the Emir of Yauri promoted and facilitated the formation of more than thirty professional and tribal associations. Each association was allowed to freely (democratically) elect its own chairperson of choice. The different chairs elected one representative (who happened to be the leader of the Farmers' Association as well as the Galadima of Yauri) as member to the Emirate Council. A conflict resolution mechanism was formed at three levels:

- Low level committee, comprising of village head, Fulani and farmer leaders. They are empowered to resolve the issue at their level, mostly by mediation and payment (compensation) as appropriate.
- Middle level committee, comprising District Head, Sarkin Fulani and branch chair of the Farmers Association. Very few issues pass this level without being resolved. Even if the issue is with the police or court, the committee can achieve an out-of-court settlement.
- High level committee, comprising His Royal Highness the Emir of Yauri, the Galadima (who also represents the Chairs of Associations) and other members of the Emirate Council. The verdict here is final and the conflicting parties adhere to it.

Since the establishment of the committee mechanism, the farmers and pastoralists are living peacefully with one another and seeing themselves as partners in progress. The committee is multi-purpose and it resolves all forms of conflict, not just farmer-herder issues. A clear manifestation of democracy and participation of people in decision-making, planning and implementation on matters that affect them.

Women and children are often prime targets when 'male' conflict escalates into violent reprisals against families and communities. For this reason women in all types of community play an invisible peace-keeping role, telling their husbands to 'take it easy' or 'find another way round'. In each there are women opinion leaders: older women who have gained the trust and respect of both men and women, are called on to mediate in domestic conflicts and also called on by the community chief to help mediate in 'male' conflicts. There seems to be scope here for involving women more overtly in inter-community conflict resolution.

### **2.5.3 Imo State<sup>12</sup>**

#### **2.5.3.1 Conditions of the study**

Fieldwork in Imo took place in mid-March 2003. was affected by two wider conflicts. The team arrived to find that all state civil servants had gone on strike because they had not received salaries since November. This meant ADP premises were off-limits, with no access to training room or to ADP vehicles, and that technically ADP staff were under threat of sanction if found working. Despite this, the PM arranged for senior staff to work with the mission team. However, the strike meant that it was difficult to send notice ahead to identified communities, to alert them of fieldwork visits and to ensure a representative sample of interest groups would be available to work with the team: many farmers were out in the field or at market. Nevertheless it was possible to talk to a range of stakeholders, including traditional rulers, and it may be that the team also accessed more marginalized stakeholders by arriving without notice. The mission in Imo was also affected by the start of the war against Iraq. Because of resulting security concerns, the team decided to curtail the visit in Imo State. However, the team was able to collect sufficient data and to hold a feedback / review session with ADPs before leaving.

Fieldwork was carried out in communities in two fadama areas - Oguta and Arondizuogu – and two pastoralist sites - the army barracks at Obinze and the regional cattle market at Okigwe – as well as a short visit to a women’s association at Okolochu (upland). Teams were allocated to look at different aspects. Through the use of Pidgin English the mission team were able to interact directly with grassroots communities in addition to having Igbo translation support from ADPs.

#### **2.5.3.2 Background and ecology**

Imo State is in the humid zone and the humidity ranges between 51% and 84%. A valuable atlas of the state was produced in the 1980s when the state was larger than at present (Imo State Government 1984). In the dry season, from November to March, temperatures may reach 33°C, but fall to 22°C in the rainy season, from April to October. Mean annual rainfall ranges from 1,800 mm in the north to 2,500 mm in the extreme south of the State. The natural climax vegetation was tropical rainforest, but it has now been turned to secondary vegetation, fallow or farmland. There is a gradual transition from forest to woodland, to scrub and derived savannah. The forest is dominated by oil-palms, often in nearly pure stands, with some *iroko* (*Milicia excelsa*) and *Brachystegia*. The gallery forest along the river valleys has a high proportion of raffia palms, whereas main species in the savannah region are grasses such as *Andropogon* spp., *Panicum* spp. and *Imperatum cylindricum*. The low, well-drained, ferralitic, coastal plain in the central and south-western parts of the State rises in the east to undulating lowlands, which include small hills of up to 120 m in height. The flat to undulating land covers 60% of the land area and is well drained, but hydromorphic soils (30%) and alluvial land (10%) suffer from permanent or periodic flooding. The soil is acid sand which does not resist erosion and there is severe gully and sheet erosion in most LGAs. Erosion is a major problem and 5% of the State is actually or potentially affected.

Technically speaking, there are no real fadamas in Imo State, but there are defined areas of land regularly flooded by the river, which are designated as fadama areas and administered as such by ADP. These are located in Oguta, Orlu, Arondizuogu and Uboma local districts.

#### **2.5.3.3 Human populations**

Imo State is in the Igbo heartland and, apart from Hausa traders in the towns, few outsiders come to Imo, whilst indigenes tend to look for work outside the State. Although Imo is one of the more densely populated

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<sup>12</sup> The mission to Imo was the only part of the study in which the author did not personally participate and his role was limited to editing the report text. Imo is also quite different from all the other states covered in this document in terms of ecology and environment as well as the very small pastoral populations.

States in Nigeria, the majority of the population remains in the rural areas. The Atlas of Imo State (Imo State Government, 1984) estimates that 10% of the population live in the larger towns and cities, some 60% in rural villages and the remaining 30% in smaller 'towns' of 10,000 to 20,000 inhabitants. Igbo define themselves as a single ethnic group although their language has many dialects. Ethnographic studies from the colonial era, such as Meek (1937), Green (1947) and Forde and Jones (1950) describe social systems and village organisation among the Igbo. Almost all Igbo are Christian and nearly half are Catholics, but traditional beliefs are still respected in many communities. The Igbo people have a tradition of community decision-making and the so-called 'traditional rulers' are a relatively recent innovation, who tend to implement rather than lead community decisions.

Land traditionally belongs to the community, the *umunna* (a localised hamlet of the minimal lineage), or to aggregates of smaller localised lineages. Land may be personally owned by male heads of families through inheritance or purchase. The allocation of land is made whether people are at home or away, provided they have kept up payment of community dues. Until recently, it was usual to find Igbo villages almost without men for much of the year, but the downturn in the national economy has brought many men back to the villages.

There are very few Fulbe in Imo State, either as residents or as seasonal migrants. The first Fulbe came south from Anambra State in 1983 to Okigwe in the north of the state, attracted by the grazing and rice residues. Their transhumance covered only a short distance and lasted three to five months. Free movement further south is restricted by hostility from crop farmers. By 2000, numerous Fulbe clans had reached Imo, notably the Mbogoyanko'en, Rahaji, Baaji, Gorkanko'en, Jogadanko'en, Jallanko'en and Daneeji. However, the conflict in Kaduna in 2000 led to attacks on their camps and most fled; only the Sisilbe have returned. They are located at Obinze camp on army land, and have paid rent for just a specified period.

### 2.5.3.4 Subsistence systems

The economy of Imo State is dominated by petroleum oil and palm oil. The farming systems divide broadly into upland and riverine, corresponding to rainfed and naturally flooded land. In the uplands, farmers depend on forest or bush fallow and the cropping system is based around tree-crops and tubers. There are wealth differentials within/around the fadama areas, with some farmers owning land and processing machinery, while the majority are subsistence farmers who lease upland for farming as well as using the fadama resource and pay to make use of private equipment. The ferralitic soil is low in fertility except for the thin top layer on which cassava, yam, maize, cocoyam, plantains, bananas and oil-palms can be grown. Just under half the tree-crops are plantations such as oil-palm estates. The main crops in the swampy areas are rice, cocoyams and a variety of fruit and vegetables.

Imo state is rich in rivers and ponds and has potentially an important fisheries resource. The fishing is almost entirely carried out by the local farming population although there are some migrant fishing groups. Fisheries are open access to the local community and 'strangers' can have permission if their activities are not seen as threatening local fisheries. All the interviews suggested that extreme pressure on the fish resource has resulted in both loss of species and ever-decreasing size of fish caught.

Pastoralism represents only a very small aspect of fadama use. Two main pastoralist stock routes cut across the state between Abia and Port Harcourt (Oguta-Owerri and Agbala-Okigwe) and skirt the fadama areas ( However no routes are gazetted or protected and neither are the 3 government designated grazing corridors at Ohaji, Agbala and Okigwe.

### 2.5.3.5 Experience of resource conflict

It appears that all other types of resource conflict apart from herder/farmer are of minor significance. Fishers do not constitute a distinct group from farmers and resource gathering appears to be of very limited

economic importance. A few cases of farmer/farmer conflict were recorded but these appear to be settled locally.

As in North Kebbi, there is extreme tension between farmers and Fulbe and no obvious resolution mechanism. The Muslim culture of the Fulbe and the Catholic faith of the Igbo seem irrevocably opposed. Because the Igbo do not buy dairy products and do not need to make use of manure from cattle, there is little basis for interaction between groups, although there were examples of small-scale trade and exchange (eg rice straw is sold to pastoralists passing by Arondizuogu). The conflict is not particularly linked to flooded land by rivers. The high rainfall in Imo means that riverine land is not of particular value since crops will grow in upland areas with equal facility. However the fadama land provides a valuable communal (free) resource which is currently very much under-utilised, compared to upland which may need to be leased. Farmers accuse Fulbe of deliberately damaging their crops and then making good their escape. Farmers occasionally threaten Fulbe with guns and any case of crop damage inevitably ends up in the hands of the police, from they find it difficult to extricate oneself without significant payments. The fact that the Sisilbe are living on leased army land for protection in case of attacks by the local population and that the majority of the pastoralists in the state in the 1990s have left for elsewhere argues that the situation will not easily be resolved. In addition, conflict between the youth of different clans has developed.

### 2.5.3.6 Conflict management mechanisms in use

There are manifestly no state level conflict mechanisms in use in Imo State, nor any state support through the MANR to provide facilities for the pastoralists and their herds (although interestingly local government had been pro-active in offering and providing a 'school' at the settlement at Obinze) The basis for interaction between pastoralists and cultivators is lacking, the pastoralists live in fear of attacks on their cattle and themselves and the products they have to sell or exchange are not in demand. Education may provide one route to reducing the current cultural barriers as the pastoralist youths learn to speak Ibo and Pidgin English (the popular trade language). Traditional rulers (*Eze*) among the Ibo seem to have limited authority. Since 'communal' decision-making is carried out by men, women are at a disadvantage: where conflicts are resolved at the farmer-herder level, damage to women's crops may go uncompensated. RID/ADP has promoted and documented many local resource user associations in the fadama areas, although it was not possible to verify how many are currently viable. There was evidence that 'associations' were seen merely as a means to provide or receive inputs which were then used by individuals rather than collectively and that technical support did not meet the real needs of the recipients.

### 2.5.3.7. Gender

Igbo women are fully involved in all aspects of production, harvesting, processing and marketing of crops and wild resources. Most of the arduous harvesting and processing work falls to women, with little or no mechanisation to aid them. While women may work on their own farms for part of the week, they also support for their husbands' activities and any profits they make go into the family pot: 'The gains we make are the ones we eat.' Women share access to land and other assets but have no control over these. In Igbo culture women do not inherit land themselves and, if widowed, are dispossessed by their late husband's family, often being turned out of their home with their children. In this situation, the potential of fadama land to provide a reliable source of independent income for women has so far been overlooked.

The Fulbe women and children at Mbirci village suffer from constant harassment and petty theft by Igbo youth. They trade milk and butter with the nearby Hausa women and the wives at Obinze barracks. This is a valuable example of a 'community' of minorities (Fulbe, Hausa and the military families from all over Nigeria) who support and protect each other, interact socially and economically and also intermarry. As in Kebbi State, the pastoralist women in Imo would prefer to lead a settled existence which would facilitate the education of their children.

## 2.5.4 Plateau State

### 2.5.4.1 Conditions of the study

Plateau State has been the scene of very serious inter-communal conflict since 2000 and indeed insecurity caused this section of the mission to be postponed. A violent conflict in Jos in September 2001 has had serious repercussions in the countryside, while ongoing guerrilla warfare in the Wase-Langtang area continues to cause many deaths and displacement of pastoral communities. In the light of this, interviews were not attempted in regions recent information suggested were unsafe, such as Riyom, Vom and Miango as well as the large arc of country between Langtang and Shendam. Given the state of insecurity, it is highly unlikely that *fadama* users could anyway benefit from Local Development Plans.

### 2.5.4.2 Background and ecology

Plateau State (Map 4) was created in 1976 from the former Benue-Plateau State, and was reduced in size in 1991 with the creation of Nassarawa State. It now consists of the Jos Plateau and the arc of territory leading down to Shendam and Wase up to the Benue River. There are no recent overviews of the State, but Ames (1934) is a useful gazetteer of the former Plateau Province. Plateau State is sharply divided by the geographical feature that gives the State its name, the Jos Plateau, a granite upthrust rising some 1000 m above the surrounding plain. The Jos Plateau varies in elevation from 900m to 1700m in the Shere Hills, east of Jos. In the south and west it is bounded by a steep scarp but in the east and north it falls to the plain in a series of steps. The Plateau itself is of a younger granite of volcanic origin and many of the extinct cones have crater lakes and these are often heavily cultivated (Grove 1952; Alford and Tuley 1974). Below the Plateau, a much larger region of savannah lowland falls gradually to the valley of the Niger-Benue confluence. The vegetation of the lowlands of Plateau State is sub-humid savannah, conventionally divided between the 'high plains' of Hausaland and the Benue valley trough. In the west more fertile soils have led to major concentrations of population. The centre of the State is largely open savannah but the tree cover becomes denser towards the Benue river.

Annual rainfall in Plateau State varies between 750 mm and 1500 mm although this is not distributed on a north-south gradient. The lowest rainfall is in the east around Bashar, and the highest is in the south and west of the Plateau in the region adjacent to Kaduna State. The length of the rainy season varies from 160 days in the north to 220 days along the Benue River. Otherwise, Plateau State is not well supplied with groundwater, and the main affluents of the Benue River that cross it, the Dep and the Mada, can fail at the height of the dry season.

The Plateau was formerly open savannah woodland but now is almost entirely grassland, and most of the trees presently growing are exotics, such as eucalyptus, or imports from the lowland. Elaborate rock formations and stony soils make agriculture problematic, but terrace agriculture has made effective use of the sparse soil. However, the advent of colonialism brought about two important changes; tin-mining and the expansion of pastoralism. Tin-mining still continues, although not on the scale of the period up to the Second World War. Failure to make good on environmental damage has resulted in many areas made unusable with tall heaps of waste and ponds with high levels of heavy metals leached from the mine tailings (Bagudu 2001). Indeed a key feature of Plateau State that makes it rather distinct from the other regions studied is the absence of any large rivers; mine-ponds represent an important locus of dry-season cultivation<sup>13</sup>. The other aspect of the Plateau environment is the high pressure on grazing from pastoral cattle. Fulbe seem to have first entered the Plateau in numbers shortly after 1900, attracted by the low levels of disease and the wide grasslands. It is likely that their cattle would have been too vulnerable prior to

<sup>13</sup> It is striking that many of the fresh vegetables sold in Nigeria's capital, Abuja, come from horticulture based on mine-ponds on the Jos Plateau, and it is therefore likely that many of the nation's elite are ingesting high levels of heavy metals.

colonialism, when slave-raiding was the principal interaction of the indigenous populations with their neighbours further north. Very large numbers of cattle have caused degradation on a massive scale and sheet and gully erosion are omnipresent. Indeed, the consequent lack of open grazing has paradoxically driven the pastoralists to keep their cattle off the Plateau for most of the year.

### 2.5.4.3 Human populations

Plateau State is distinctive for its high level of ethnolinguistic diversity, and it is populated by a great variety of small groups living in hamlets, with a complex clan organisation and ritual kingship systems. This has ensured that no one language or people is dominant, although the largest ethnic groups are probably the Berom, Ngas and Tarok. Gunn (1953) gives a useful overview of the main ethnic groups of the Plateau region.

Fulbe movement into the lowland regions is less well chronicled, but it is generally more recent than the movement onto the Plateau. A low human population, low levels of tsetse and mosquitoes and unlimited grassland drew Fulbe pastoralists from all over the semi-arid regions. Fulbe established themselves in all parts of the Plateau and originally lived alongside cultivators with minimal friction. To judge by interviews, Fulbe settlement began in the late nineteenth century but was given a great boost by the end of warfare consequent on colonialism (Morrison 1976). Bruce (1982) discusses how Fulbe camps have spread outwards from those in Bauchi, through Tafawa Balewa and into the Gindiri region. Most of the pastoral Fulbe in Plateau State appear to have come from the north-east. However, during this century, the development of trade routes and communications in central Nigeria has attracted Fulbe from many regions and clans from Niger, Kano, Katsina and Sokoto States have settled in the lowlands, along with the older-established groups from Bauchi and Borno. Hickey (1978) has described aspects of the social organisation of the Fulbe of Bokkos. The history of Fulbe movement onto the Plateau is described by Awogbade (1983), whose monograph also covers the social organisation of the Gashish Fulbe.

The capital of Plateau State, Jos, is a colonial creation, set up by the tin miners who came to the Plateau soon after the imposition of indirect rule, and sustained by the missions who established their headquarters in the State (Morrison, 1976). Jos has attracted migrants from all over Nigeria to work in the tin mines and related service industries (Plotnicov, 1967; Freund, 1981) and its human population may be as much as one million. Jos is well known as an island of southern, and largely Christian-oriented populations in the otherwise Muslim north.

### 2.5.4.4 Subsistence systems

The farming systems of Plateau State are dominated by rain-fed cultivation, but vegetables are grown on the damp soils exposed in the dry season in the volcanic crater lakes of the Plateau. The Plateau used to have a very distinctive agriculture based on the production of two cereals in particular, fonio (*acha*) and iburu, which are uncommon elsewhere in Africa (Portères, 1955). Davies (1946) conducted a comprehensive survey of the Gyel area, inhabited by the Berom people, which showed that some 60% of the total land surface was used for farming, with fonio the dominant crop. Fonio gives good yields on eroded soils and its stover is recognised as an important feed for stock. Other crops grown include sorghum, millet, maize, iburu, yams, cocoyams, sweet potatoes, Irish potatoes and a variety of vegetables, both local and exotic. Livestock are dwarf cattle, sheep, goats, pigs, chickens, ducks and turkeys. A distinctive feature of farming on the Plateau is the use of *keraana*, a spiny euphorbia, as live fencing, which makes an effective barrier to the entry of livestock into cropped fields.

However, the last thirty years has seen a significant change in the farming systems, with important implications for the economy of the Plateau, as well as for the interaction between pastoralists and farmers. Dry-season, or *lambu*, farming was probably brought to the peri-urban regions of Jos in the mid-1960s by migrants from Hausaland. They initially cultivated vegetables, typically peppers and potherbs, using the *shaduf* lift. At this period, the mine-ponds and river valleys were virtually unused and there was no

competition for the land. Shortly afterwards, the dry-season cultivation of sugar-cane and potatoes was introduced, perhaps through agricultural extension. At any rate, in many areas this was remembered as the first impetus towards dry-season gardens. However, the cultivation of vegetables soon became more profitable, as the expatriate population expanded in the 1970s and regional products began to be shipped long distances within Nigeria. Migrant Hausa appeared in greater numbers, but, perhaps surprisingly, many of the settled Fulbe began to buy or rent land and began gardening. Uptake by the indigenous farming populations was much slower, but by the 1970s it had begun in villages close to Jos. Since then it has been gradually spreading throughout the Plateau, with remoter communities only adopting it in the late 1990s. A major change in the production system occurred in the early 1980s when small pumps for lifting water became available. These were distributed by the ADPs in Bauchi but seem to have been available on the open market in Jos. Even those who could not afford pumps hired them from entrepreneurs thereby expanding then potential size of plots and making possible large-scale commercial market-gardening. With the growth of Abuja in the 1990s the market for vegetables was stimulated still further, making almost all riverine plots extremely valuable.

Another quite different change was the spread of two New World crops, the Irish potato<sup>14</sup> and maize, in the rainfed areas. Maize was known on the Plateau prior to the 1970s but only grown in very small quantities as a garden crop. With the coming of the ADP system in the late 1970s, with hybrid seed and heavily subsidised fertiliser and tractor hire, it became a very attractive crop and many farmers desisted from the traditional fonio, sorghum and millet to plant maize. With the cessation of funding from the IBRD in the early 1990s, subsidies ceased and in many regions farmers reverted to their original cropping system<sup>15</sup>. The spread of the potato is less obvious since it was not heavily promoted by any one agency. Nonetheless, it is perceived as a highly prestigious food, rather like wheat, and farmers able to grow it can often get high prices at the farmgate. From the 1980s onwards, the potato has been the major cash crop in the Bokokos area, SE of Jos. Its cultivation expands every year, but it seems the market is expanding still faster. The typical production system in the Bokokos area is now potato intercropped with maize, a system that depends entirely on fertiliser and is economic only because of the high price of potatoes.

Neither maize nor potatoes produce residues that are either palatable or nutritious for cattle, and as a consequence, the residues have very limited attraction to the herders. Where once the cattle stayed close to the homestead, now they must leave in search of areas where sorghum and millet are still grown, for example around Mangu. The overall pattern is that cattle have little or nothing to contribute in many areas and are regarded more as a nuisance than as potential contributors to soil fertility.

Off the Jos Plateau, the elaborate escarpment farms on the southern edges, are a farming system with few parallels elsewhere in Nigeria. The use of terracing and intensive composting to keep hillside farms fertile has been described in some detail by Netting (1968) and Stone (1996). Many of these hill-farms have been abandoned in favour of rainfed plains cultivation of cereals. Findlay (1945) observed that when colonial policy compelled the Dimmuk people to move down to the plains they reverted to slash-and-burn cultivation. In the lowlands, the basis of subsistence is rain-fed cereal cropping, especially of sorghum and maize. Remarkably, dry-season *lambu* gardening is very rare and most rivers remain accessible to pastoral herds.

The Fulbe have historically depended on riverine grazing for part of the year and indeed they regarded this as land over which they had some rights. But as more and more land has been turned to gardens, this not only has the effect of blocking access to water for their stock, but reduces the basis for interchange between farmer and herder. Vegetable residues are typically fed to goats and pigs and farmers are not willing to allow Fulbe to enter the plots; indeed they try very hard to exclude the cattle. Effectively, in many areas, Fulbe have accepted that all they can hope to retain are access tracks, and even these are in danger of being

<sup>14</sup> So named in Nigeria, to distinguish it from the well-established sweet potato (*Ipomoea batatas*)

<sup>15</sup> Although the ADPs had encouraged them to take out trees to ease tractor-ploughing, thereby exposing the fragile soils of the Plateau to greater levels of wind erosion.

encroached. For this reason, herders now only leave the bulk of their herd on the Plateau for a relatively short time every year.

There has thus been a major shift in migratory patterns among pastoralists. They originally established bases on the Jos Plateau because its high-value grasses and presumed their large herds could pass the majority of each wet season there. They began to farm and indeed took on many of the values of their agricultural neighbours. However, as the density of farmed land increased it became necessary for the cattle to spend longer in the dry season grazing areas off the Plateau and only return during a specific window when the rain has fallen but the crops were not yet above ground. As it became more and more difficult to remain on the Plateau as the wet season advanced, most pastoralists began sending their herds to Bauchi, more particularly the open and still sparsely populated areas off the eastern edge of the Plateau. This also required more labour since the herds had to be managed while in movement for most of the year and thus the pastoralists had to hire increasing numbers of herdboys from other tribes. The situation is now that most herds make a brief visit at the beginning and end of the wet season but essentially live elsewhere for most of the year.

This has had a further impact on other aspects of pastoral production; herd-splitting. Typically, herders split their stock into a milking herd, which stays by the homestead and provides income for women, and nutrition for the household. However, this also has labour costs and pastoralists are finding it increasingly difficult to keep their children at home, an unwanted consequence of improved educational access. As a consequence some herders are now dropping the milk-herd, buying powdered milk and keeping their entire herd in one place. Women have thus lost a significant source of income and are switching to other systems of income generation such as small ruminant keeping.

### 2.5.4.5 Experience of resource conflict

The Jos Plateau attracted pastoralists in the nineteenth century when its human population was relatively sparse. The discovery of tin and the subsequent growth of Jos, inevitably brought a major expansion of the farming population, and all but very marginal land was brought into cultivation. Colonial officials were already noting instances of farmer-grazier conflict on the Plateau as early as the 1940s (Davies, 1946:113), while Awogbade (1983:76 ff) documented similar problems in the 1970s. During the 1980s, some Fulbe from the Plateau moved permanently into the lowlands, especially into the forested region along the Benue, where farming populations are still sparse. Nonetheless, the disease environment and wide grasslands of the Plateau were too attractive not to be used and many groups persisted.

While most indigenous Plateau populations depended on upland rainfed cultivation, and the principal cereal crops were sorghum and millet, this provided a significant basis for interaction between the two groups. The farmers kept few cattle (although populations of the indigenous *muturu*, a humpless longhorn were probably higher than today) and the Fulbe could graze their cattle on the crop residues, with the farmers benefiting from the manure. However, once dry-season gardening began to take off, the river edges that had provided lush grazing were increasingly populated by farms. Moreover, the tubers and vegetables mainly grown there did not provide attractive residues for cattle and the farmers were increasingly preferring fertiliser. At the same time, the switch to maize that followed the ADP system and the growth of potato cultivation made even crop residues in upland areas unsuitable for cattle.

These agronomic changes did not take place without problems; pastoralists came to river-banks previously covered in grass to find tomatoes. Young men herded their cattle between upland cereal fields and the cattle strayed into the crops. However, these types of conflicts were usually settled informally and the types of violent clashes characteristic of some other northern states were not characteristic of Plateau. However, from 2001 onwards the situation has changed dramatically in character, with urban conflicts being replayed in rural areas with unattractive consequences for all sides. On the 8<sup>th</sup> of September, 2001, serious religious conflict broke out in Jos, and riots between Christians and Muslims led to substantial loss of life and property. Once the news filtered through to rural areas, there was significant pressure for the indigenous farming populations to attack the resident Fulbe pastoralists. This occurred at several sites around Jos, notably Miango, Vom and Riyom, leading to numbers of deaths, burnings of houses and property and theft

of stock. Elsewhere in rural communities, emissaries were sent to urge these attacks, but fortunately more pacific counsels prevailed and the peace was kept. Nonetheless, many pastoralists were forced to flee Plateau State and reached Bauchi, which has a reputation for being more sympathetic to Muslims. The governor offered to open up Forest Reserves and it is there that many of the refugees are now settled; few have any intention of returning to Plateau State. In June 2003, some herds were encountered making their way on to the Plateau on an experimental basis; but relations remain very tense.

One of the other bases for interchange between Fulbe and farmers was the hiring of boys to herd cattle. Most Fulbe herds are too large to be herded by the family labour alone, and indeed many Fulbe household heads noted that their sons would rather hang around in towns than herd cattle, as a result of education. But it was common for many of the larger tribes to send their sons herding with the Fulbe; usually they would be paid with a one- or two-year old bull after one year or a heifer after two years. Such animals have become the basis for small village herds now kept by many indigenous groups. However, since the crisis, a breakdown of trust has meant that many of the larger groups, such as the Irigwe and the Berom have withdrawn their children and many other groups are now more sceptical.

A major consequence of the crisis has been that a number of key stock routes across the Jos Plateau, especially those passing near Miango, Riyom and Vom are now permanently blocked and are unlikely to re-open in the near future. Map 4 shows the stock-routes across Plateau (excluding those in the southeast, which are also in disarray) and marks those which have been blocked.

There has been a response to this, albeit hard to interpret. In October 2002, a series of attacks by well-armed groups on villages in the Jos area began and continued through into 2003 with the Berom people of Rim and Bachit the principal victims. The attackers are widely believed to be mercenaries, coming either from Niger or further north in Nigeria, and their goal seems to be creation of mayhem rather than theft. It is widely believed that this is revenge exacted by the Fulbe for the earlier killings, but this seems unlikely. More probable is that elite northern interests are taking advantage of the situation to foment disorder. The consequence has been to further sow distrust in rural areas but also to give the resident farming populations a powerful rationale for permanently taking over valuable Fulbe farmland along rivers.

If this were not enough, at the other end of the state, an even more serious outbreak of hostilities has turned the region into a virtual no-go area. Box 7 narrates the history of conflict between the Fulbe and the Tarok people in the Langtang area;

### **Box 7. Conflict in the Langtang area**

In June 2002, a serious conflict broke out in the Langtang area, some 200 km. SE of Jos, and was still current in May 2003. The main inhabitants of the region are the Tarok people, principally farmers, but the large open savannah between Langtang and the Benue river has long attracted nomadic Fulbe graziers. There are also neighbouring smaller tribes such as the Boghom as well as substantial settlements of Hausa, notably at Wase (east of Tarokland towards the Benue) and the ferry-crossing at Ibi (southeast). The Tarok have maintained good relations with the Fulbe for a long time and are now themselves substantial cattle owners, often as a result of sending their sons to be trained in herding by the Fulbe. The Tarok are overwhelmingly Christian, although traditional religion also plays an important role in maintaining social order, whereas the Hausa and Fulbe are strongly Muslim. The Tarok, moreover, have a long tradition of military service, and many of their leaders are ex-generals.

Apparently, a fight broke out in Yelwa, near Shendam (in SE Plateau State) at the end of June 2002 between Christian and Muslim residents, resulting in the burning of churches. Fleeing Tarok families brought the news to Langtang South, inciting attacks on Hausa-owned businesses in various settlements in the region. Prompt intervention of the security services brought about a temporary calm. However, it appears that a substantial number of Hausa and Fulani, armed with modern weapons and some at least from outside the region, regrouped and began attacking Tarok settlements from a base near Wase. Local people claim that mercenaries from Niger and Chad were involved although this is hard to verify. At this point, Tarok church leaders seem to have turned funds collected for evangelisation to the purchase of modern weapons. Traders appear to have had some guns in readiness for self-defence and were soon able to supply automatic weapons from Enugu. In general,

government reaction seems generally to have been inaction, although there is a report of a pitched battle at Kadarko, near Ibi, where the Mobile Police were forced to retreat. Government-controlled media made no mention of the situation for some three weeks, when they reported (falsely) that things were back to normal. The lack of official action was so marked that one of the leaders of the Tarok, Rev. Maina, took the unusual action of placing newspaper adverts in the independent press pleading for a more effective response from government.

Since this date there has been open armed warfare between Tarok and Hausa /Fulbe and the whole region is a no-go zone. Women and children have fled into refuges and well-organised groups regularly burn down villages in remote areas. Soldiers have been sent to key flashpoints such as Wase, but since they will not enter the bush and meet the armed groups on their own terms, this is a largely ineffective. A worrying consequence has been the uncharacteristic arming of small communities and the development of weapons workshops. Although a few hunters have always had Dane guns, their manufacture is now widespread and even herdboys now go to the fields armed. Peace summits between Jos-based leaders have had little or no impact. The elections in May 2003 distracted the political elite in Jos in the preceding months from paying attention to this rather serious situation. In the first months of 2003 there were a series of minor outbreaks of violence culminating with another major conflict in Langtang in March. In June, the well publicised murder of Muslim travellers passing through Langtang lorry-park has reminded the indigenous populations that the conflict is alive. A visit to Langtang towards the end of June 2003 was marked by unnaturally quiet roads and a collapse of commerce and services such as water and electricity. Roads in this region of Plateau State have become effectively divided between Muslim and Christian blocks. Pastoralists who are usually grazing the fresh grass at this season were conspicuous by their absence.

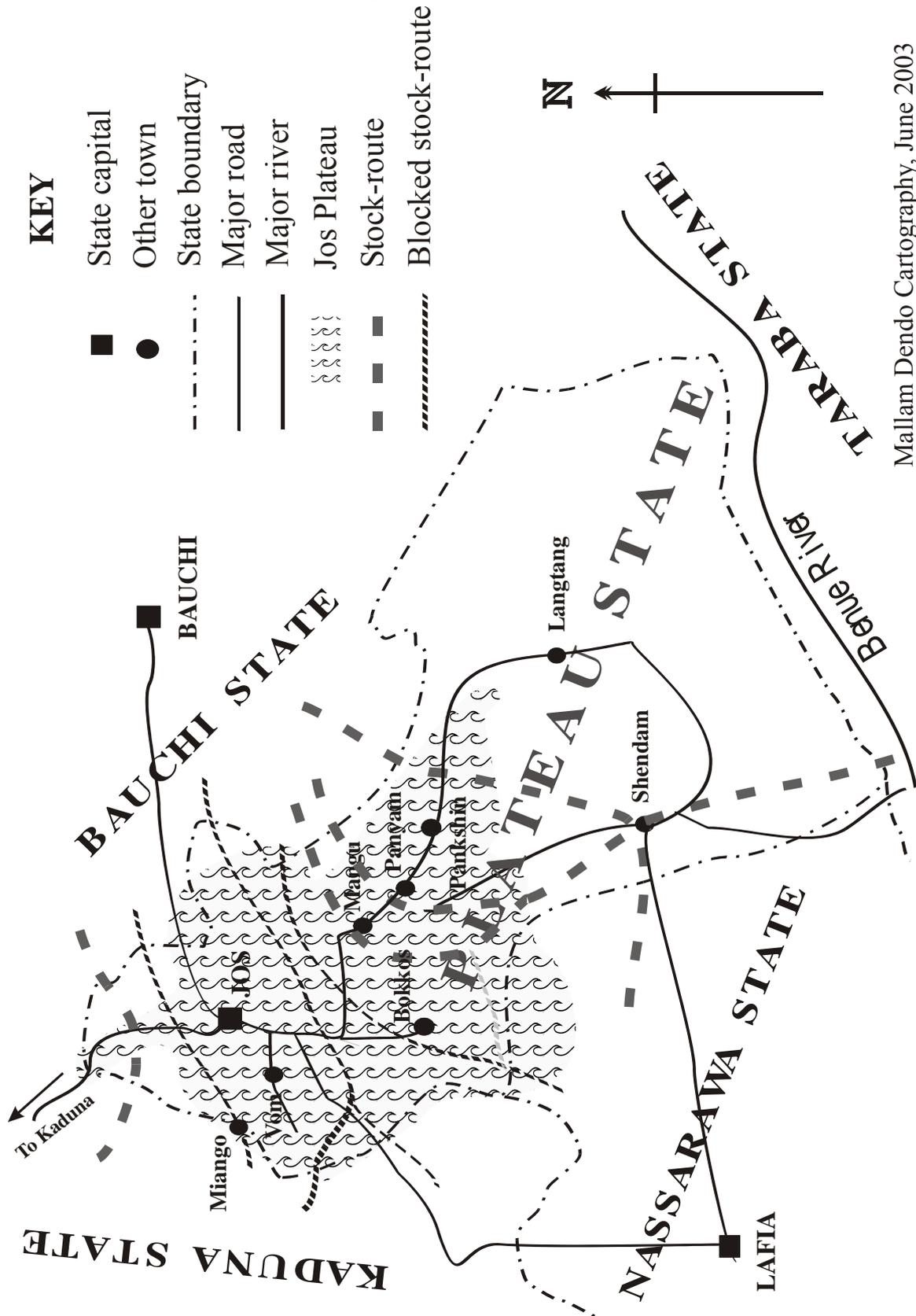
The most striking feature of this rural strife is the absence of any effective response from government. After a conflict occurs, police and army roadblocks are set up for a week or so, but then are removed once there is no immediate fighting. Refugees are settled in rural areas or have moved to towns such as Langtang and Jos to stay with relatives. Insecurity has discouraged farming in many areas and severe food shortages are beginning to be felt, especially in the southeast.

These episodes illustrate the problems in dealing with community conflict. What are originally conflicts for resources are being transformed through religious affiliation; the original issue may not have been the Fulbe, but they have been drawn in. The consequences of government failure to restrain expanding private ownership and trade in modern weapons is now highly apparent. They also show that the churches have now become wealthy and are no longer willing to remain passive. They are highly organised and willing to fund ethnic agendas and confront armed attacks. This is unlikely to provide fertile ground for the LDPs proposed by *Fadama II*.

### 2.5.4.6 Conflict management mechanisms in use

These serious conflicts in some regions might make it appear that developing community associations and effective resource use planning under these circumstances is difficult. But strangely, elsewhere in Plateau, relations between farmers and pastoralists are generally good. Indeed, in most of the interview sites, farmers and herders have developed good relations over a period of nearly a century. In many places, regular consultative meetings are held between herders and indigenous farmers to ensure that good relations are maintained. Map 5 illustrates the resource use map of Bokkos, south of Jos, where such meetings have ensured peaceful interactions between farmers and herders;

Map 4. Plateau state stock-routes, showing those blocked since 2001



Mallam Dendo Cartography, June 2003

## Natural Resource Conflict in North-Central Nigeria: Bibliography

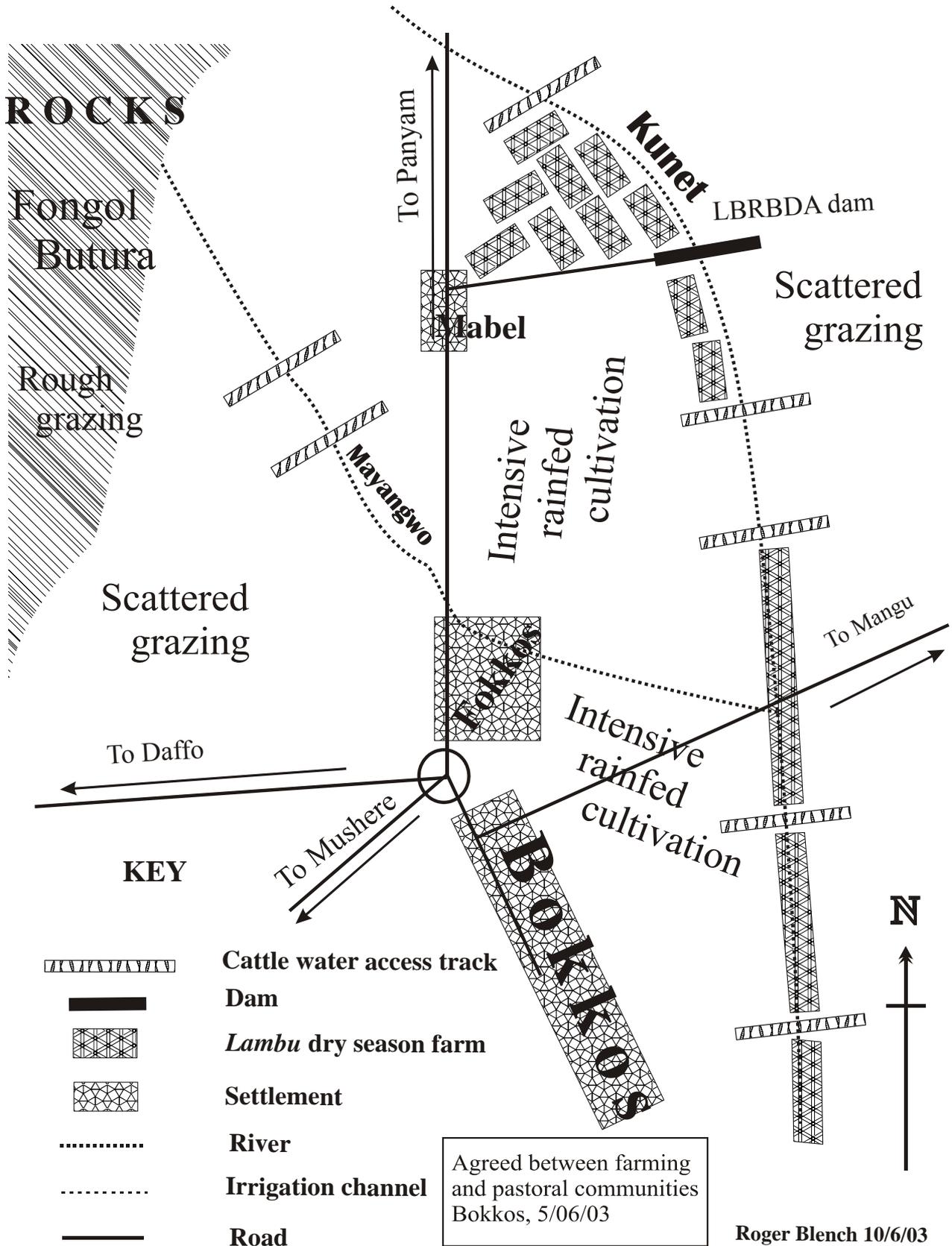
As in Kebbi State traditional rulers are the key to this type of understanding. In general, the key issues are damage to crops by the herds and encroachment of stock-routes by farmers. It is not uncommon for this to be settled directly between the two parties. If not, then it is usually carried to a meeting between the *Ardo* of the Fulbe and the *Mai Unguwar* of the farmers. If still this does not settle matters, it is then carried to the District Head (*Sarki* or *Hakimi*). Even this last case is relatively rare. Going to the police is considered a last resort and all the traditional rulers considered this a sign of social collapse. Moreover, only farmers go to the police. The police are considered predatory in most areas and will usually extract substantial fines from any herders they incarcerate, so farmers may do this when they want to punish Fulbe.

The response to the Jos crisis is a good example of the system operating. In most areas, once the news reached the Local Government, local rulers, Hausa migrants and pastoralist leaders called meetings and each agreed to tell their communities to keep the peace. Significantly this did not occur in Riyom, Vom and Miango and attacks followed. In the months afterwards, most other communities held subsidiary meetings to follow-up on the peace message. This is particularly striking, since the great majority of non-Fulbe leaders are Christians, or at least not Muslims. Comparing the situation with northern Kebbi State, where the antagonists are both of the same religion illustrates the importance of developing institutions for dialogue. The interpretation of the attacks is problematic, but it noteworthy that in these areas (which are almost urban) there are significant bodies of unemployed youth and moreover, *fadama* land had been sold to the Fulbe long ago. Since the expulsion of the herders all this land has been reclaimed by the original owners.

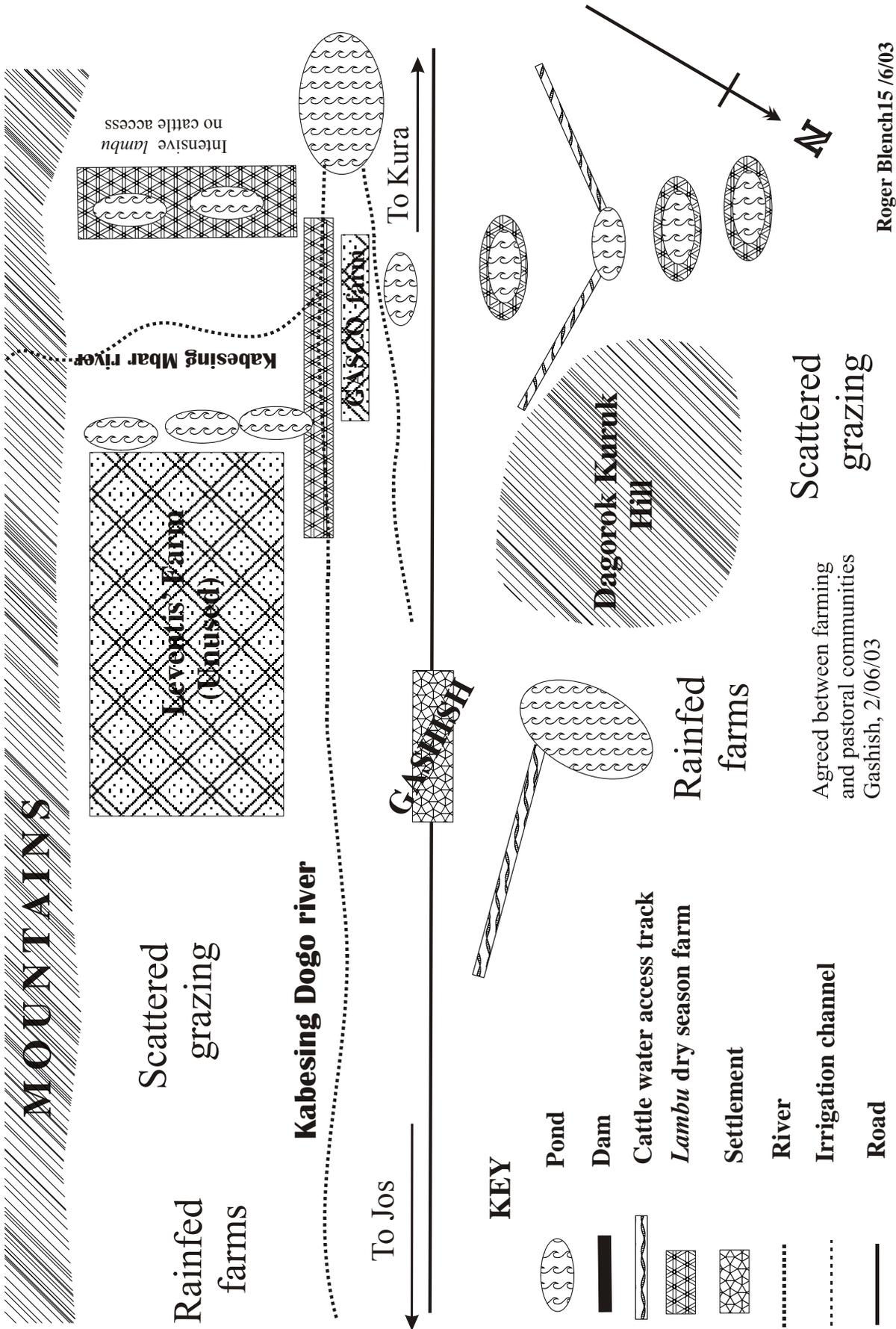
The role of Local Government is somewhat restricted in Plateau State although responses are highly variable. In some interview sites, Local Government is seen as helpful in arranging peace meetings, and individual counsellors as showing concern over local issues. Elsewhere, however, Local Government is seen as inactive and parasitic. An important observation made by a number of traditional rulers is that they are in a good position to know if a situation is tense and likely to get out of hand. However, even when they report the matter to Local Government for forwarding to the State, high-level inaction is the usual result. This has the effect of subverting their authority as a failure to follow up suggest that they have no real influence.

Map 5. Bokkos resource use map

Resource use map of dry-season farming and cattle access around Bokkos, Plateau State



Map 6. Gashish resource use map



Holding meetings is a tool, but in practice how are livestock and crops kept apart? Plateau farmers are long-used to issues of livestock control, as they also keep cattle and pigs, which are potentially very destructive in tuber farms. The use of spiny euphorbia to fence fields clearly reduces the incidence of crop damage. However, in some cases, farmers have gone further and fenced the cattle water access routes making entry into fields almost impossible. It is very likely that this practice will spread in the next few years. Map 6 illustrates the situation in Gashish, south of Jos, where the majority of dry-season farms are around the spring-fed ponds that are a common feature of the landscape. The land is so valuable that most ponds are entirely surrounded by gardens and have no cattle access. However, in most cases, the tracks are clearly marked and agreed between the two communities. This is always the case in the rainfed areas where the fields are too extensive to fence. Cattle tracks are obviously attractive to hard-pressed farmers and they are occasionally tempted to encroach on them. In several cases, pastoral leaders described how the Ward Heads officially sanctioned the destruction of crops across tracks. Map 7 shows the situation in Bor, south-east of Jos, where cattle-tracks are fenced off;

The other side of this is that pastoralists are aware of the difficulties of using unskilled labour (as they are obliged to hire local herd-boys) to manage cattle in densely farmed areas. As a consequence, they have gradually been reducing the amount of time the cattle stay on the Plateau. The original production system seems to have been to send the cattle to the lowlands in the dry season and keep them on the Plateau in the wet, so they could benefit from post-harvest residues before going down. Similar systems of vertical transhumance are also known from the Himalayan region. As farming density has increased, so the time spent on the Plateau has reduced and now the main body of the herds simply visit between their dry and wet season grazing. Map 8 shows the situation in Dokan Tofa, off the Plateau towards Shendam. Indigenous farmers depend on rainfed cereals, particularly sorghum and the *lambu* gardens are farmed principally by migrants, who lease the land. Two of the rivers in the region are too steep and rocky for gardens and there are agreed cattle access tracks to the third river. As a consequence, relations between pastoralists and farmers are generally amicable.

Despite the problems in parts of Plateau State, the community solutions that have developed to reduce conflict in many areas are more effective than elsewhere. They consist of four major elements;

- pre-emptive and post-conflict inter-community meetings to resolve potential problems
- authority of traditional rulers generally respected once decisions are made
- increasing use of passive mechanisms to prevent crop damage
- reduction in period when cattle and growing crops are present together

Community relations are fluid in many areas and increased population and further expansion of dry-season farming has the potential to cause friction. Sensitive facilitation of Local Development Plans *based on existing community solutions* will help integrate the production systems of all stakeholders.

### 2.5.4.7 Gender issues in Plateau State

Plateau State represents an interface between societies where women have a considerable amount of personal and economic freedom and those where their activities are highly circumscribed. Increasingly restrictive Islamic practices have meant that many women, even in rural areas, enter purdah after their marriage and cannot freely circulate until some two decades have passed. However, among the non-Muslim groups, women can move around freely and they are allowed to retain earnings from farm and other activities. The rise of dry-season vegetable farming has encouraged the formation of many women's groups (Photo 13) with the consequence of improved nutritional status for children and increased rates of school attendance. Women are also able to pursue a wide range of other economic strategies, the most important of which is trading, especially foodstuffs. Almost all the vegetable traders selling to the Abuja trade are women. In rural areas they also hire themselves out for farm-work and engage in small-scale artisanal mining for tin (Photo 12).

**Photo 12. Artesanal tin-mining near Gashish**

**Photo 13. Mapun women's work-party**

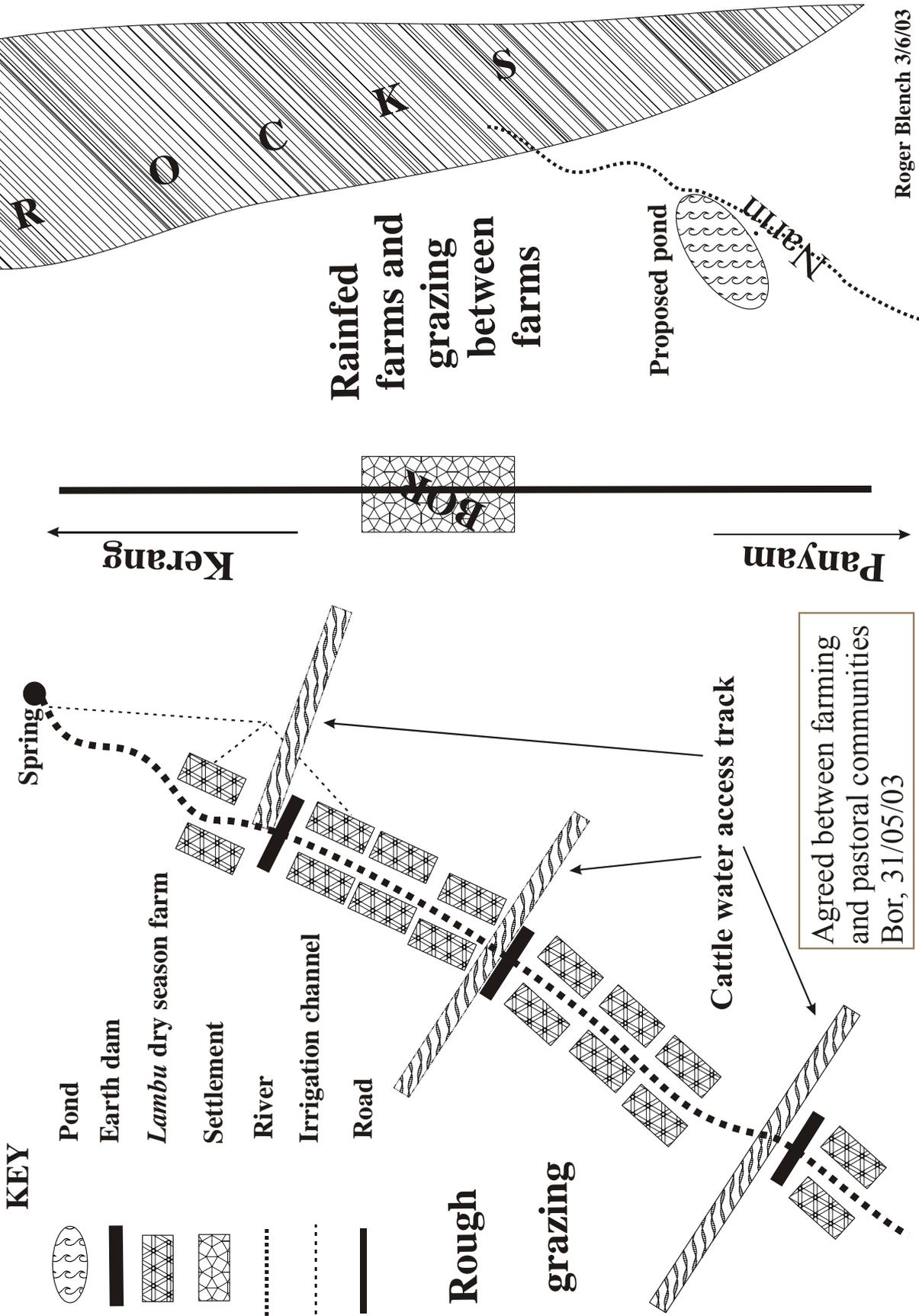
Among the Fulbe, women traditionally have access to the income raised from the sale of dairy products and this is still the case with the transhumants, who are to be seen selling in most markets. However, increased Islamisation and a declining market for milk products has caused many communities to place greater



emphasis on the production of meat for sale. Although most communities still keep a small dairy herd at the homestead, some herders observed that even this practice was disappearing. The consequence has been a major shift of economic power away from women as men largely control meat sales.

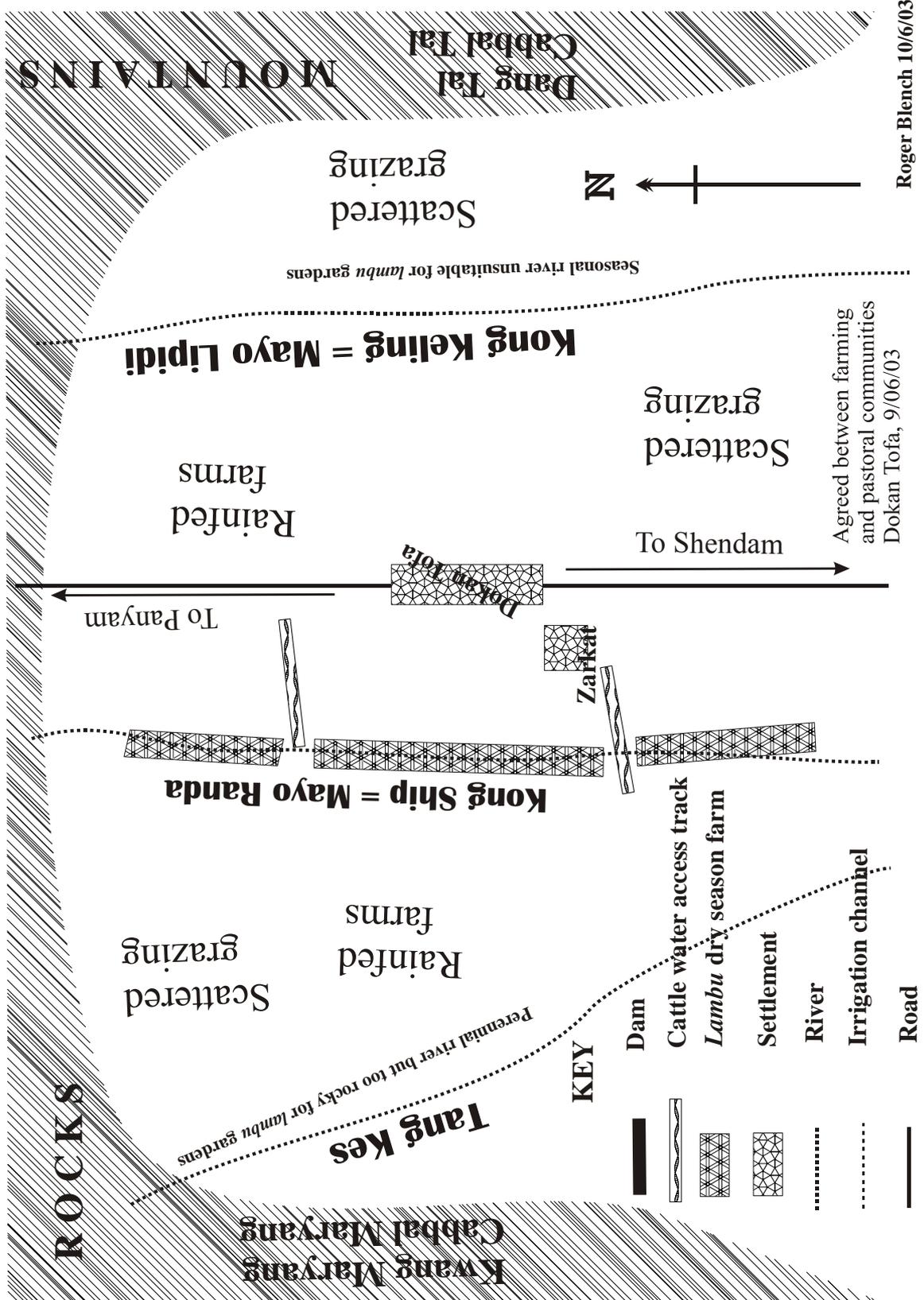
Map 7. Bor Resource use map

Resource use map of dry-season farming and cattle access around Bor, Plateau State



Roger Blench 3/6/03

Map 8. Dokan Tofa resource map



### **2.5.5 Taraba State**

Taraba State was surveyed in October 2003. Interview sites were in the north of the State, along the valley of the Benue. Taraba State has seen a considerable amount of conflict in the last decades, notably in the Wukari area and on the Mambila Plateau.

#### **Wuro Ardo Abdul-Mumini**

Wuro Ardo Abdul-Mumini is some 40 km. south and east of Jalingo and is a Fulbe community. Three clans were identified; Siwalbe, Bokolo'en and Katsinanko'en. The Siwalbe have been in Taraba for over 70 years, the other two groups came from Gombe area in about 1980. Other groups resident in the area include the Mumuye subgroups Kassa, Lasma & Kasher. They are the main cultivators in the area. Crops grown include sorghum, millet, maize, groundnuts, yam-tubers etc. The pastoral groups cultivate maize, sorghum and millet.

Thirty years ago, the pastoral groups only engaged in casual cultivation. But with the expansion of family size, cultivation has gradually intensified to support the increased population. The decline in the milk trade by women which previously supported pastoral families has also contributed to the intensification of cropping. Most women now no longer trade in milk, both because the price of milk has fallen so low and because of more strict adherence to Islam. The basis of the pastoral economy is now meat sales. Young bulls and barren females are sold to meet family needs such as naming ceremonies, marriages, and medicines for humans and livestock. Some families are able to raise enough crops for subsistence and sell some to meet household needs.

The pastoral groups stay with their livestock throughout the wet season. At the beginning of the dry season, the animals are sent to the Daka hill area and return for crop residue grazing before they are finally dispatched for dry season grazing proper. Areas visited include Bali and Gashaka local governments, in the south of Taraba state. In the past, the pastoral groups hardly went beyond the River Benue, close to their wet season camps, but due to fadama cultivation, which intensifies every cropping season, they must seek pastures much further afield. The Gashaka dry season grazing located in the Toungo block is infested with tsetse flies. Pastoralists, though not familiar with pour-ons (direct application trypanocides), do buy other drugs to cope with humidity-related diseases.

In 1992, when the pastoral groups moved into this area, land was simply allocated to them by the village head. However, this informal practice is changing. Local residents are selling the land to wealthy people from urban areas claiming that the land had always belonged to them. Pastoral groups are losing the land earlier allocated to them through the traditional ruler. Some have paid substantial sums to the Mumuye farmers since for now they are willing to sell, but pastoral groups are gradually being pushed out by farmers and the authority of traditional rulers is gradually being eroded.

In the past ten years fadama cultivation by Mumuye farmers has gradually intensified. After the wet season crops are harvested, rice and sorghum, maize and beans are planted for dry season. Plots are dotted all over the fadama such that access to grazing and water without crop damage is difficult. Efforts by the Ardo to discuss the issues with the Mumuye ward heads are outrightly rejected. The local leaders are unwilling to engage in dialogue with pastoral leaders. As the pastoral groups are not cultivating in the *fadama*, they are losing access rights.

### Lessons Learnt

- Traditional rulers are gradually losing power.
- Ward heads are unwilling to engage in dialogue with pastoral leaders.
- Mumuye farmers willing to sell land to anybody who can pay, including the pastoralists.
- The pastoralists are gradually being displaced from the River Benue fadama.
- Facilitators must work hard in order to break the circle of rejection of dialogue between the groups.
- Milk is no longer considered as source of income for women.

### Tau

Tau is located north-west of Jalingo in Ardo Kola local government. It borders the River Benue and has extensive fadama areas. It attracts different groups within and outside state mainly because of high soil fertility, good grazing potential in both wet and dry seasons and abundant fisheries. As a consequence Tau is highly multi-ethnic. The original settlers being Kona, but Tau is currently inhabited by Fulbe, Hausa, Kanuri, Shomo, Jen, Kona, Mumuye, Karimjo, Munga, Lomo, Lo, Zo, Wurkum, Etulo, Waja, Tiv, Lama and Tangale. The pastoral Fulbe clans include the Ba'aji, We'we6be, Daneeji, Wodi'en, Siwalbe, Jahunen, Gorkanko'en, Jannanko'en, Bokolo'en, Ajaranko'en. This area has been settled by the various groups since about 1830. The Fulbe of Muri conquered them in the nineteenth century and still retain the chiefship.

Although all groups engage in crop cultivation during the wet season with varying degrees of intensity, only two farmers undertake dry season cultivation. Fishing is the main activity during the dry season. Commonly grown crops include; rice, sorghum, millet, maize, groundnuts, beans, cassava and sugar-cane. Some Hausa fishermen from Kano State migrate to the area in the dry season. Some of them are now settling with their families while others stay for the dry season only and return home at the end of fishing season. The pastoral Fulbe also grow crops though mainly cereals. Their principal economic activity still remained livestock rearing.

The traditional ruler still retains the power of land allocation in Tau, apparently because it is remote and far away from the seat of political influence. Because cropping and grazing resources are abundant in Tau, it attracts very large numbers of migrants. The traditional ruler plays an important role by ensuring migrants obtain permission from him or his representatives before embarking on cropping, grazing or fishing.

Although fadama cropping is insignificant presently, but it has the potential to take off in the next few years. Only occasional crop damage from wet season cultivation triggers conflict between the different resource users. Most such conflicts are resolved at the farm level and in some instances referred to the traditional leader for resolution. The traditional ruler has initiated meetings of the Ward Heads and Ardos to discuss access to grazing areas and watering points ensuring that stock routes are protected within every ward.

Most of the pastoral Fulbe migrate out of the area in mid-wet season to Jereng, Mayo-Belwa and Ngurore. This movement was largely attributed to tsetse flies. However, some remain in the area throughout the wet season and move to the River Benue in the dry season. This is possible where dry season cultivation is not common and no conflict is experienced. The occasional conflicts that do occur are usually in the wet season, due to crop damage. Many cases are settled between the farmer and the pastoralist, but hard to resolve issues are forwarded to the Galadima. Police cases are rare.

**Lessons Learnt**

- Traditional Ruler is playing important role by promoting peaceful co- existence between cropping and pastoral groups and is able to exercise authority without political interference due to the remote nature of the site
- Ethnic diversity currently living in harmony.
- Potentials of the area will attract more immigrants in the future
- Potential arena of conflict unless local development plans are worked out well in advance.

**Sibre**

Sibre is 15km to the west of Jalingo in Ardo Kola local government. Farming and grazing are the major sources of subsistence. Ethnic groups resident in the area include-Mumuye Kassa, Mumuye Yakoko, Mumuye Pugomng, Mumuye Zing, Hausa, Fulbe, Bacama, Chamba, Wurkum, Janjo and Kona.

Only wet season cultivation is practiced in this area in spite of the extensive fadama land available for dry season cultivation. Staple crops grown are sorghum, maize, yam, groundnut, beans, potatoes and cassava. Limited fishing also takes place as a secondary activity. One farmer had attempted dry season cultivation in the past and was successful. The Mumuye inherit land within the household. Migrants are allocated land for use as long as they are around and are cropping such plots. Interested persons could also buy from individuals and traditional rulers.

Occasional conflicts occur between pastoralists and farmers over crop damage. In most instances they are able to resolve the matter at their level. Where they cannot agree, it is forwarded to the Ward Head and unless the conflict involved bloodshed it usually resolved at this level. Serious cases are however forwarded to the police, though rarely. Stock routes leading to grazing areas and watering points are usually discussed and agreed between the community members and pastoralist leaders with the Ward Head mediating. The traditional ruler is effective in handling conflict issues provided he is allowed by government to exercise his powers without interference.

**2.5.6 Borno State**

The present Borno State is the remaining part of the state split into two when Yobe State was created. The most comprehensive picture of the climate, ecology and vegetation of Borno State is gained from the Land Resource Division Study of North-Eastern Nigeria (LRD, 1972). Most of the recent climatic data on the Lake Chad area has been reviewed by Thambyapillay (1983). The mean annual rainfall of the State varies between 300 mm and 900 mm and the length of rainy season between 80 and 160 days.

Most of the State consists of semi-arid savannah or sub-desert, with flooded pastures towards Lake Chad and montane regions in the extreme south-east. The soils in the north-central part of the State are largely aeolian sands, formed by wind-drift from the desert. In the north, tree cover consists largely of *Acacia* spp. and *Balanites aegyptiaca* and shrubs such as *Leptadenia* spp. and *Salvadora persica*. The grasses are annuals, particularly *Aristida*, *Chloris* and *Digitaria*. Moving southwards, denser tree cover includes baobab, *Anogeissus leiocarpus*, and shrubs of the *Combretum* group. Grass cover is dominated by *Loudetia* which further south gives way to *Andropogon*. The basic agriculture of the savannahs is upland rainfed cultivation, based on millet, sorghum and pulses.

The irregular distribution of rain has meant that agriculture is uncertain in much of the region and this has permitted the development of extensive rangelands. The Gwoza hills, along the Cameroon border, are part of the larger granite chain of the Mandara mountains and, in the south-west, the Biu Plateau, a basalt plain, rises to nearly 1,000 m. In the Mandara mountains, a complex terraced montane agriculture was developed

by the hill-peoples (White, 1941b). In many places the terraces are falling into disrepair as the populations move down to the plain.

Dry-season farming is practised in the valley of the Komadugu Yobe along the Republic of Niger border and on the swampy areas of Lake Chad. The Komadugu was originally the basis for an elaborate irrigation scheme established in the late 1950s to produce wheat and residues for livestock feed. The swampy grasslands between Hadejia and Gashua have traditionally been a significant resource for fadama cropping, fishing and livestock feed (Adams and Hollis 1987). However, the construction of the Tiga Dam in the mid-1980s has drawn off water into the Hadejia-Jama'are River Basin in Kano State, reducing the flooded area west of Gashua and leaving the Komadugu Yobe virtually dry in its upper reaches for most of the year. The natural vegetation of the valley is palm-scrub, dominated by the dum-palm and various acacias. There has been considerable discussion about desertification along the Republic of Niger border, although this has not been confirmed by scientific studies.

### **Kukurpu**

Kukurpu is located southeast of Biu in Hawul local government. The major ethnic groups include; Bura, Hausa, Kanuri, Yungur and Fulbe. Some of the pastoralists are settled in the area and hardly move away even for dry season grazing. The transhumant however pass through and proceed further for the dry season. They begin the onward journey south in October to December and return in May to July.

#### **Photo 14. Irrigated vegetable patches near Kukurpu**

Fadama cultivation using the *shaduf* started in 1970 and 1971 when the Hausa people arrived from Kano. The Bura people quickly realised the importance of dry season farming, and followed suit. Pumps were introduced in 1997. Crops commonly grown are tomatoes, onion, lettuce, pepper etc. Photo 14 shows vegetable plots near Kukurpu and Photo 15 the channel that leads the main supply of pumped water to the fields. Plots are fenced to reduce the risk of crop damage by small and large animals. Fadama cropping is carried out right to the edges of the River. This situation is already causing erosion and siltation of the river. The farmers realise this but are resistant to changing their practices. This has led to drastic reduction of fish in the river thereby affecting farmers' income.



**Photo 15. Irrigation channel in Kukurpu**

The Bura were generous in the early days of fadama cultivation but they soon realised the importance of fadama farming and therefore discontinued the free lease system. Migrants now have to hire plots for the cropping. In the past, pastoralists would assist the farmer to harvest his crop and in turn the farmer allowed them to graze freely. Farmers now sell crop residue to resident pastoralists, who willingly pay. A former symbiotic relationship has gradually been monetised.



**Conflict And Conflict Management**

Conflict is uncommon between farmers and pastoralists, but friction does occur. At times they are able to settle the matter within them and at times the *Bulama* (traditional ruler) or otherwise the *Lawal* had to intervene. Sometimes cases are referred to the police and subsequently to the Courts, when the two parties failed to agree totally. Although no formalised agreements have been reached regarding the use of fadama especially on access to grazing land and watering points, farmers fence plots to prevent animal damage to crops. The fences are however not strong enough to prevent cows from getting in. The river dries up in the middle of the dry season forcing pastoralists

to seek water elsewhere, reducing pressure along the fadama. Farmers depend solely on the tube-wells during this period for pumping water on their farm plots. This serves as a natural regulatory system for conflict. The major transhumance route passing through the area and the settlements are protected from encroachment. This is as a result of an order from the State government to the Emir of Biu who in turn directs the order to the Lawal and thence to the various Bulamas. A farmer was killed by transhumant pastoralists in 2002 in a dispute over crop residue grazing.

**Lessons Learnt**

- The traditional authority can be effective if allowed to function without government interference-the case of the probated transhumant route.
- Farmers can take initiatives to reduce conflict between them and the pastoralists, for example fencing plots.
- The present system of cultivation right to the river bank is causing erosion, siltation and reducing the water-level thereby affecting fish breeding.
- There is no arrangement on the ground regarding the protection of local routes and access to watering points.
- The manner in which plots are dotted about in the fadama further complicates access to grazing.

**Yelwa**

Yelwa is located about 3km east of Kukurpu. It is inhabited by Bura, Hausa and Fulbe. Although no pastoralists are resident within the Bulama’s jurisdiction, they still visit during the wet and dry seasons. Transhumant pastoralists pass through his domain when trekking south for dry season grazing and at the onset of the rains returning back to wet season base camps. The primary stock route is protected by the community, following instructions from the Emir of Biu and the Lawal. The Lawal summoned all Bulamas and Ardos to discuss the issue of stock routes and access to watering points at the beginning of every wet

and dry season. The Bulama of Yelwa has made efforts to ensure that there was minimal encroachment. Any farmer who deviates, does so at his own risk.

Fadama cultivation was practised from about 1970, prior to the *shaduf*. Three years later, the first Hausa man with *shaduf* technology arrived and the Bura people adopted the new system. Four years later, the then North-East MOA, Irrigation Department, introduced pumps, which were adopted by both the Bura and Hausa. Vegetables are now the dominant crop. In the early days Bura farmers allowed the Hausa to cultivate the fields free. But three years after that, the system changed to hiring, initially with low charges but expensive today. The traditional rulers no longer allocate land to anybody. Cultivating to the edge of the river bank is causing erosion, siltation and low water levels, which affects the quantity and size of fish. Few farmers who have realised the imminent danger are beginning to plant grass on the embankments.

Conflicts occasionally occur between the two groups of resource users, mainly from crop damage or access to grazing fields or watering points. At the fadama level no effort had been made to clearly define routes. Farmers fence their plots to keep livestock off but the fences are not strong enough to prevent incursions by large animals. However, when crops are damaged the Lawal settles most cases with only occasional reference to the police. The transhumance route is protected by the communities.

### Learnt Lessons

- The powers of the traditional ruler of Bui to protect transhumance routes is clearly effective
- Water shortages in the mid-dry season have reduced pressure on the fadama area
- Willingness of farmers to fence their plots reflects preparedness to head off conflict.

### Wurje

Wurje is south-west of Bui in Shani local government. The three ethnic groups resident in the area are Bura, Fulbe and Hausa. Bura children are taken for herding by the Fulbe and have become so completely assimilated into their culture that they are now referred to as Bura Fulani. They hardly speak their original language and usually marry other Fulbe. They now own cows and therefore look after them in the *rugas*. Transhumants visit the area en route to the south for dry season grazing beginning in December and return at the beginning of the rains in May/June.

### Fadama Cultivation

#### Photo 16. Bura residual moisture cultivation

Fadama cultivation was introduced by a Hausa migrant farmer in the 1970s. The Bura people started residual moisture cultivation fifteen years after the Hausa farmer introduced *shaduf* cropping. Photo 16 shows residual moisture cultivation in a palm grove in the Shani area. When ADP launched a pump programme in the early 1990s, Shani local government purchased some pumps and distributed them to some farmers. Presently, few farmers are able to purchase their own pumps. Crops grown include; tomatoes, onions, pepper, sugar-cane, vegetable leaves, lettuce etc. Crops produced are sold in the local markets and Bui. Fadama plots are weakly fenced to prevent small and large



ruminants entering. The pastoral Fulbe settled in the area do not do fadama farming. As a secondary activity the farmers also fish. Control of fishing is by the representative of the Chief of Shani.

The Bura people allow Hausa farmers free access to their fadama fields for cultivation, a system which has remained the same in spite of the economic value of fadama land. Charges have not been introduced ten years after the pump technology was introduced. Farmers are prohibited from selling their fields by order of the chief of Shani.

### **Conflict And Conflict Management**

Although there is no established procedure inter-relating fadama cropping and grazing, there have not been any serious clashes between the two groups. Farmers complain about the manner in which long range pastoralists behave. While in transit they damage crops and graze crop residues without permission from owners of the farms. Farmers gather crop residues and keep them to feed their traction animals. The relationship with the settled pastoralists in the area is mutual. Where crop damage occurs, the farmer and pastoralists discuss and agree on reasonable compensation. Where they cannot agree, the case is referred to the Bulama or Lawal. Police cases are rare. The Chief of Shani usually summons the Lawals, Bulamas and Ardos to discuss stock routes, especially for wet season grazing. Farms on stock routes are forbidden.

### **Shani**

As a follow up to some issues during the visit to Wurje, a visit was undertaken to Shani and extensive discussions held with the traditional ruler. The traditional ruler of Shani has made it a policy to summon all his district heads and pastoralist leaders at the beginning of the wet and dry seasons to discuss cropping and early evacuation of harvested crops in order to avoid friction between farmers and pastoralists. The district heads and Ardos will in turn discuss this with the Bulamas, farmers and pastoralists. The traditional ruler found this workable and therefore monitored it closely to avoid abuse. Stock routes leading to fadama areas for grazing and watering animals are protected against encroachment. Any farmer who encroaches on stock routes, will to be asked to quit immediately and in the event of crop damage the farmer has no cause for complaint. In the event of crop damage, the farmer and pastoralist are encouraged to agree on reasonable compensation. Where they cannot agree the Bulama or the District Head mediates. Only in extremely rare instances do the police intervene.

### **Access To Land**

There is a standing rule that no person is allowed sell land in Shani Chiefdom, which cuts across all ethnic groups. Land can only be given out on loan or lease. In a situation where an immigrant is leaving, he can dispose of his house but not the land. Farmers crop right to the river-banks thereby aiding erosion, increasing siltation and reducing water in the river and the capacity of the river to retain water all year round. He is willing to take up control measures that can help reverse the situation. The traditional ruler expressed concern over delays in the take off of projects, late release of farm inputs and the political interference of the powers of traditional rulers.

### **Fishing**

Water bodies are the responsibility of the traditional ruler. He appoints a representative to assist him to regulate excess fishing of ponds. Fishing gear and water poisoning are regulated. But the ruler of Shani complained of political interference by politicians which is gradually eroding his powers and dismantling the traditional system of regulating fishing and conflict management systems. He refers to this as a dangerous trend, which will only worsen the situation.

## **Conflict And Conflict Management**

For the transhumant pastoralists, the ruler of Shani has constituted a committee comprising of District Heads, Police, SSS, Palace Bodyguards, Military and some Bulamas. He sends them as an advance team to discuss with leaders of the transhumant Udawa at the entry point of the State. Clashes between farmers and the transhumants have been reduced tremendously. The menace of bandits in the area has been serious and lives and properties of people in the area are targets. To counter the menace, the ruler of Shani has set up vigilante groups in villages. Hunters' associations have also been mobilised to deal with the situation. The strategy is gradually yielding result.

### **Lessons Learnt**

- Efficiency of a system due to the dynamic nature of a traditional ruler.
- Political interference with the powers of traditional rulers can destroy an efficient and effective system.
- Dialogue can be established with the transhumant pastoralists.

### **2.5.7 Gombe State**

Most of Gombe and Bauchi States are in the Sudan-Sahel belt, with an annual rainfall of between 600 mm and 1,300 mm; most areas average 900 mm. The mean annual rainfall in Bauchi town during 1980-1988 was 906 mm, some 100 mm less than in the previous decade. The length of the rainy season varies from 100 to 190 days between the north and south of the State. The principal river systems are the Gongola River, which loops through the centre of the State, and the Jama'are River, which crosses through the north-west. The damming of the Gongola River has recently created a new lake, Dadin Kowa Reservoir, along the eastern border of the State.

Most of the States are fairly flat, with an elevation of 2-400 m, although the plains are dotted with inselbergs in some regions. The States are bracketed by two mountainous areas. The natural vegetation is predominantly semi-arid savannah, with tree density increasing further south. The dominant species are *Acacia* spp., *Anogeissus* spp., *Combretum* spp. and the desert date, *Balanites aegyptiaca*. Only in the Forest Reserves of the north-west are there extensive regions of baobab and silk-cotton. In the extreme north-east, which abuts Borno State, conditions are dry and desert-like.

Cultivation systems can be divided between those common to the semi-arid regions, based on sorghum and millet intercropped with pulses, and the intensive hill-agriculture of the south-east. On the plains, cattle keeping is integrated with cropping enterprises through animal traction. Tiffen (1976) gives a detailed history of the development of cropping systems in Gombe Emirate and the responses of farmers to changing socio-economic conditions during the twentieth century. Cultivation is largely rainfed, although the damming of the Gongola River has created expanded potential for irrigation. Dry season cultivation of *fadama* areas also expanded during the 1980s. The Tula uplands support an extremely elaborate terracing system, with wide, shallow stone terraces and complexes of mixed crops. In 1983 the area under cultivation was estimated at 1.4 m hectares, equivalent to a land-use intensity of 20-25% (RIM, 1984a).

Gombe and Bauchi States are a mosaic of densely populated regions and sparsely settled LGAs such as Alkaleri and Ningi. The main concentrations of population are between Katagum and Misau and in the south-east between Gombe and the border of the State. This distribution of population reflects a combination of river systems and the widespread thin, stony soils. There are no settlements in the Yankari Game Reserve, and there are also very large Forest Reserves, particularly in Ningi and Toro LGAs.

Gombe and Bauchi States represent a triple interface between Hausa/FulBe northern culture, the pastoralists of Borno and the diverse peoples characteristic of the Middle Belt. Virtually the whole of the northern 'arm' of the State is populated by Hausa and settled FulBe. Their most important southern settlement is Bauchi town itself, which is essentially a creation of the nineteenth century Jihad (Morrison, 1982), and was established in the centre of an area inhabited by small, non-Islamised groups. The north-east represents the westernmost extension of the 'Barebari', the former Kanuri kingdom. This is a fringe region of Hausa society and the division between the urban (*birni*) areas and the rural village, *kauye*, is less pronounced than elsewhere. Bauchi and Gombe were established as outposts in non-Hausa-speaking areas, whereas the Hausa villages scattered through the north of the State do not recognise more than nominal allegiance to any urban centre. Although family heads also have individual farms, one of the key institutions making the household a productive unit is the *gandu*, a farm worked collectively by the father and his married sons. The participants in a *gandu* share the produce and it is a mechanism by which children can assert their continuing claim over family property.

A notable feature of Gombe and Bauchi States is the high proportion of settled FulBe. The FulBe came in the wake of the establishment of the Emirates at Bauchi and Gombe. Unlike in central Hausaland, where they have rapidly integrated with the farmers and began to lose their language, most FulBe in Bauchi State still speak Fulfulde and have retained more of their culture.

Characteristic of all these smaller groups is a very individualistic social organisation based on small villages. Although they have Village Heads today, this office is essentially a colonial introduction and the exiguous ethnography suggests that previously collective decisions were made by a committee of elders. Throughout most of the south, persistent slave-raiding forced most of these communities to settle in inaccessible mountainous sites, and many have only begun to farm the plains since the 1960s.

### Gasa

Gasa is south-east of Gombe in Yamaltu local government. It is inhabited by Hausa, Fulbe, Waja, Tera, Tangale and Kanuri. Some Fulbe are settled in the village and have taken up other trades, especially farming. Some no longer own cows other than bulls for animal traction. Some are settled outside the village, still keeping livestock and retaining their culture. The third group are the transhumants who visit at the beginning of the dry season and return at the beginning of wet season. Community members believed that this category of pastoralists are from the Republic of Niger and Chad. They keep the Bokolo and Rahaaji breeds. The Bokolo breeds are more common in Sokoto, Kebbi and Zamfara states. Some the transhumant pastoralists must actually be from within Nigeria.

This community, and in particular the Hausa, started fadama cultivation over 30 years ago using the *shaduf* and the residual moisture system. Pump irrigation was introduced in 1986. Crops commonly grown include tomatoes, onions, pepper, okra, sugar-cane and other vegetable leaves. Fadama plots are fenced with maize or sorghum stocks and thorny shrubs, although this can only prevent small ruminants from passing through. The community of Gasa are predominantly Hausa, but Fulbe also own land, through purchase and inheritance.

### **Conflict And Conflict Management**

Apparently the relationship between the farmers and the settled herders is cordial. There are defined stock routes into fadama areas for watering animals. Map 9 shows a Resource Use plan of Gasa. In spite of the fact that the fadama land is heavily cultivated, the two groups live harmoniously. Farmers reserve the crop residues for their traction animals. Since the fadama area is heavily cultivated in the dry season, the settled pastoralists usually graze further north where a small *hurmi*, grazing area, is reserved at Salihawa Tashar Kuka with an earth dam.

However, relationships with the transhumant pastoralists are poor. Clashes had occurred between them; the worst in 2001. Transhumants will graze their farms both crop residues and unevacuated crops. The group carries weapons and will attack farmers who try to protect their farms. The transhumants were not in the area at the time of the survey and their views could not be canvassed.

### **Lajangara**

Lajangara is located on the southern banks of Rivers Dasa and Balanga in Balanga local government area. It is inhabited mainly by the Waja, while the Babur, Fulbe and Hausa are considered migrants who do not exercise rights over land. All these groups cultivate crops especially during the wet season. Udawa transhumant pastoralists also visit the area for crop residue grazing. While some proceed further south, others remain throughout the dry season. All pastoralists return further north in the wet season because Lajangara is marshy.

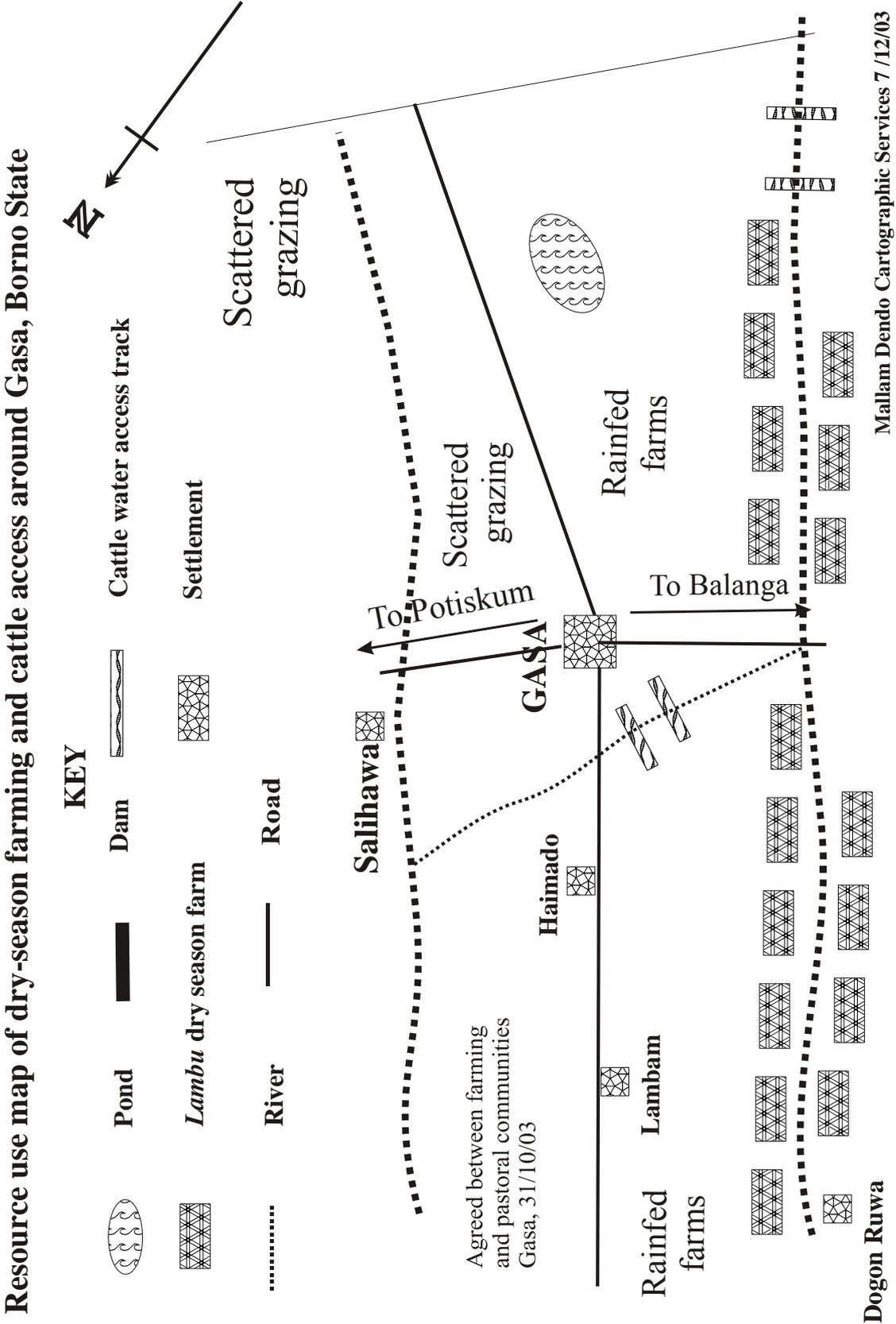
Fadama cultivation only started in 1989 and farmers still use the *shaduf* irrigation system. Although they are aware of pumps, they do not use them. Their *shaduf* plots are usually fenced with maize or sorghum stocks or thorny shrubs. Immigrants are usually given land either free or with payment and there are no land sales. Land is therefore left for their children to inherit.

Erosion along the river banks is noticeable and farmers who cultivating to the top of the river bank are worsening the situation. No control measures are in place. The rivers are poorly managed. Siltation was clearly noticed, the water bodies are already drying as early as the month of November. Although fishing is not an important activity, with the complete drying up of these rivers fish catches are very reduced.

### **Conflict And Conflict Management**

Because this area is located at the confluence of Dassa and Balanga rivers, settled pastoralists usually relocate to the uplands in the wet season. However, their relationship is generally cordial with the farmers as they return for dry season grazing. The greatest conflict had been with transhumant Udawa pastoralists. They described as very unfriendly and destroyers of crops. Youths can attack farmers who attempt to resist them. The only method applied to control the situation in the past 4 years was to station the military and mobile police at the entry points of the state. This has temporarily improved matters, but is not a long term solution.

Map 9. Resource use map of Gasa, Gombe State



Mallam Dendo Cartographic Services 7 /12/03

### **Jangargari**

Jangargari is in the east of Gombe and south of Dadin-Kowa in Yamaltu East Local Government. Inhabitants of the village include Hausa from Sokoto, Katsina and Zaria, Fulbe Gassi-Walama from Shani [Borno State], Waja etc. When the Hausa arrived in the area in about 1950 they engaged in farming, fishing and hunting. The Fulbe arrived in 1965. The Fulbe are in three categories; settled Fulbe in the village and keep no livestock, settled Fulbe but at the periphery with livestock and the transhumants who visit at beginning of the dry season and return in about May.

Fadama cultivation has been practised for more than 25 years using the *shaduf* system of irrigation. Pumps were introduced in 1988 when the ADPs assisted farmers with credit. Some farmers purchased pumps before the advent of the Government credit scheme. Some are beneficiaries of Fadama I programme. Crops cultivated include; tomatoes, onions, pepper and other vegetables. Since no other indigenes were found in this area the Hausa were able to successfully lay claim to the land. Subsequent migrants received allocations from the Jauro of the settlement who is responsible to the District Head of Hinna. Erosion is widespread, and fuelwood cutting has destroyed the trees and shrubs leaving the soil bare.

### **Conflict And Conflict Management**

Conflicts between farmers and transhumant pastoralists are quite limited. The settled pastoralists have cordial relationships with farmers. Although the transhumant pastoralists do not respect the community, clashes were rare. But the community must employ watchmen in the fields. This has not eliminated conflict totally but some reduction has been achieved. Crop damages by the settled pastoralists are usually resolved amicably. Where that becomes difficult, the case is referred to the traditional authority for resolution. Three stock routes exist in the area. One is an all year round stock route while the other two are seasonal. Two earth dams are also available for the pastoral herd.

### **Hinna**

Hinna is a Tera-speaking settlement located in Yamaltu-East local government. Other groups are Hausa and Fulbe. Some Fulbe are fully settled within the community and do not own cattle while others live in camps on the periphery of the town. Transhumants visit only in the dry season.

The history of fadama cultivation dates back to 1950s when the Hausa and Jarawa engaged in *shaduf* irrigation. The Tera traditional ruler allowed leasing of land but not sale. However, in 1965 the Northern Nigeria Development Company (NNDC) took over substantial portions of land for Vegfru operations. Farmers were meagrely compensated. Some of them as a result lost their fadama land. In 1969, the Vegfru Tomato Factory started functioning and introduced pump irrigation. The farmers followed suit.

### **Conflict And Conflict Management**

Udawa transhumants come into the area heavily armed and aggressively graze crops and crop residue alike without permission. Any farmer who resists becomes a victim. Through this process many lives and property have been destroyed. Government used the Military and Police to stop them entering, but this is viewed as temporary and cannot be sustainable. Dialogue must be introduced if at all lasting solution is required. The settled pastoralists have good relationships with the crop farmers. Crop damage is settled without going to the police except in extreme cases. The local government has made some effort with regard to protecting stock routes in conjunction with traditional rulers. Farmers in recent times stockpile their residue for their traction animals.

## Hashidu

Hashidu is in northern Gombe, on the Gongola River in Hashidu local government. It is inhabited by the Kanuri, Hausa and Fulbe. Some Fulbe have settled in town and have taken to cultivation as a primary economic activity. Others are settled on the edge of town and still practise herding as well as cultivating for subsistence. Transhumant pastoralists visit the area every year. One group is the Udawa, believed to be foreigners from Niger and Chad, and the other is the Bokolo'en, who originate from Sokoto, Zamfara and Kebbi.

Fadama cultivation dates back to the late 1960s. This was introduced by the Hausa, initially using containers to water the crops and later the *shaduf*. Pumps were introduced in 1974, but only became widespread in 1986 when the ADP gave them out to farmers. Although fadama cropping was dominated by cereal crops in the early days, vegetables now predominate because they fetch higher prices. Fadama plots are fenced to protect them from small ruminants. Land is acquired through inheritance but immigrants can be leased land or exceptionally can purchase it. Pastoral groups do not own fadama land but lease or hire it for crop cultivation. Contrary to many communities visited, this community does not cultivate on the river banks. Because of this, no erosion or siltation was observed. They are able to do some fishing since the water level is good. Fishing activities are regulated by the Sarkin Ruwa.

## Conflict And Conflict Management

Conflict between the farmers and the transhumants was on the increase until the recent intervention from Government. The Udawa are accused of grazing crops and crop residue without any consideration. The Bokolo group are considered friendly and relate well with farmers. Minor crop damages by settled pastoralists are resolved between them or through the intervention of traditional heads. Although there are no clearly defined routes and grazing areas within the fadama area, relationships between the two groups are cordial. A Forest Reserve adjacent to the fadama lands is heavily grazed by the pastoralists. Farmers are claiming that the fadama land under cultivation is about one third of the total area and therefore pastoralists still have access to more of the land. Unless agreements are reached now, with expansion of fadama cultivation more problems and conflict will occur.

## Wuro Nareeje

Wuro Nareeje is a pastoralist settlement north of Hashidu village, established for over 70 years. The land was not inhabited when they arrived, and thus the land belongs to them. The pastoral group grow wet season crops to supplement their income from livestock and have some small scale fadama cultivation, hired from the crop farmers. Crops cultivated include; potatoes, rice and sugar-cane. The pastoralists keep their livestock at the base camps all year round. However, during the dry season, they orbit around the fadama areas and Malori grazing area in Bauchi State. Stock routes have been narrowed and fadama land is gradually being taken over for cropping.

The transhumant pastoralists are not friendly and grazed farmers' crop residue without permission. No major conflict took place between the resident pastoralists and the farmers, but relationships are poor. When pastoral livestock damage crops, farmers take the case to the police instead of allowing local resolution amongst them or the traditional heads.

### Nafada

This settlement is north of Gombe close to the Gongola River in Nafada local government. The inhabitants of the settlement include Fulbe, Ganawa, Bolawa, Tera, Tangale and Waja. There are pastoralists who are settled in the village and now crop. Another settled group still live away from bigger settlements with their livestock and also farm. The third group is the transhumant pastoralists who visit from November/December and depart May/June.

Fadama cultivation dates back to late 1960s. Residual moisture and *shaduf* systems pre-dated pumps which were introduced in 1996 by migrant Hausa farmers. More farmers now do *fadama* cultivation. Vegetables are the dominant fadama crop. Erosion is highly visible in the *fadama* areas, as farmers are cultivating right up to the riverbank. Farmers leave erosion-affected areas and open new areas, which also get eroded. Fadama fallow cannot be sustained at the rate at which the population is growing.

### Conflict And Conflict Management

Nafada is close to the Yobe border where one of the major stock routes passes. The Udawa transhumant pastoralists have in the past grazed their crops and crop residues. They are well armed and can attack a farmer who attempts to resist. In recent times, the Governor of Gombe State placed the Military and Mobile Police at entry points to prevent them from visiting the state. Although this has yielded some result, the traditional ruler of Nafada felt that it had only worked along the major routes, as the borders are porous and many of have passed through other points.

For the settled pastoralists, relationships were cordial. The traditional ruler ensured through his District Heads and Village Heads that no stock route is blocked in Nafada Emirate. However in spite of this approach to stock routes, some are narrowed due to gradual encroachment. Disputes are settled by the traditional heads. No agreed fadama utilization procedure is established.

The menace of bandits is rampant in this area. Villages are harassed and their properties looted. Occasionally bandits block highways, rob travellers, maltreating and inflicting injuries on innocent persons. Who these bandits are and where they come from is still controversial.

### Lessons Learnt

- A network of stock routes though narrowed is still protected by traditional authorities.
- The relationship between farmers and transhumant pastoralists is very strained.
- Although no concrete agreements have been reached settled pastoralists and farmers, relationships are cordial.
- Farmers have had no extension to raise awareness environmental degradation.

### 2.5.8 Bauchi State

The background to Bauchi State is covered under Gombe State.

#### Alamari

Alamari is southeast of Azare along the Potiskum road in Katagum local government. Inhabitants are Kanuri, Hausa and Fulbe. The Fulbe are settled on the periphery of the village. Transhumant pastoralists have been visiting the area for many years. This community are wet season cultivators but fish extensively in the dry season. They do not engage in fadama cultivation in spite of the fadama plains of River Dambam. The elders claim they tried *shaduf* irrigation about 40 years ago. They provided labour for a government

irrigated wheat programme for three years. Since the closure of the project, which packed all its facilities including pumps, they have lost interest.

Apart from wet season cultivation, this community engages in fishing during the dry season. Some of them migrate to Lake Chad, Ibi and Tela [Taraba State] for fishing and will only return for wet season cropping. Sometimes fishing is restricted for three months in order to allow for regeneration of stocks. No poisoning is allowed and the *dumba* trap fishing system is prohibited. Because of increases in population, fish have declined in the water bodies. However, it was acknowledged that a smaller catch fetches a higher price now.

### Conflict And Conflict Management

This community experiences extensive conflict with Udawa transhumant pastoralists. The transhumant usually arrive November/December. They however do not allow time for complete harvest and evacuation of farmers' crops. In the process of grazing crop residue, crops remaining in farmers are destroyed and therefore conflict ensues and clashes take place resulting in to lost of lives and properties. The pastoralists are accused of aggressive attacks with dangerous weapons. In recent times government have attempted to stop them in Udubo grazing reserve until farmers have completed harvest and evacuation of their crops. It is yet to be effective due to weak enforcement.

### Lessons Learnt

- In spite of the fadama land available, the community does not practise fadama cultivation.
- A government irrigation project ran for three years in the fadama bordering the community where they provided labour with no long-term impact.

### Bakatuma

Bakatuma is close to the western bank of River Zigau in Shira local government. Kanuri, Fulbe and Hausa are the main inhabitants. Some Fulbe are settled in the village and have taken to farming. Other Fulbe clans such as Ja'awa and Jahunen are settled at *rugas* outside the village. Many pastoralists visit the area in the dry season. Uled-Suleiman camel rearers have begun to spend their dry season grazing in the area.

This community does not practise fadama cultivation despite access to the river. In the dry season, the majority of them are in trading, mostly cereals and livestock. Some youths however, travel to major cities of Kano and Lagos for manual labour. The dangers of labour migration in recent times is reflected in the incidence of HIV/AIDS. One youth was infected and died leaving his family with problems.

### Conflict And Conflict Management

There has been conflict between the community and transhumant pastoralists. According to the community members, both the Bokolo'en and Uda'en have aggressively grazed their crops and crop residues. When communities react they are attacked and at times lives and properties are lost. They have not had a problem with the Uled Suleiman Camel herders. The community alleged that reports were forwarded to District Heads when the transhumants are sighted or when crops are damaged but their response is discouraging. Community members accused some traditional rulers of taking money from the transhumants. Whether this is true of some traditional rulers is uncertain, but it is not true of others who have made concerted efforts to contain the situation.

### Lessons Learnt

- ✘ Some traditional rulers are accused of taking bribe from transhumant pastoralists to allow them to go free even when they have damaged crops
- ✘ The appearance of Uled-Suleiman Camel graziers is a clear indication that there is further encroachment of desert.

### Tsangayar Marke

Tsangayar is located along the Ningi-Bauchi road in Ningi local government. The village is inhabited by Hausa and Fulbe and was established 36 years ago. The Fulbe are settled in the village and at *rugas* on the periphery. The Fulbe are of Jahunen and Katsinanko'en clans.

Fadama cultivation is as old as the settlement. In the early days farms were irrigated through ordinary watering and later farmers shifted to *shaduf* system. Pumps were introduced in 1988 when some farmers saw them at Toro. Fadama farms are fenced annually using cereal stocks and thorny shrubs. This is intended largely to keep small ruminants off the plots and to some extent large animals. Crops commonly grown include tomatoes, pepper, onions, banana, carrots, green leaves. Farmers are experiencing flooding as a result of erosion. Some efforts were made to plant grass along the river banks but the grass was washed away due to inappropriate extension advice. Trust in the ADPs is now limited; some farmers who deposited money for pumps and waited for four years to no avail are now very sceptical of the authorities.

Some migrants from Kano and Kaduna states come to cultivate every dry season. When the settlers first arrived, a traditional ruler authorised the acquisition of land for cropping and construction of residential houses. As time passed by the village head also allocated land to migrants. Any land sale must be referred to the traditional ruler.

### Conflict And Conflict Management

Farmers reported that visiting transhumant pastoralists who are largely Bokolo'en, Sulebanko'en, Gorkanko'en and Yabaaji, damage their crops. This was responsible for most of the conflicts between them and the pastoralists. Settled pastoralists are friendly and even when crop damage occurs it was always resolved either when the two farmers agreed on reasonable compensation or the traditional ruler settled the case. Such cases are rarely taken to the police. However, with the transhumant police and court cases are common. The Ningi local government had on many occasions made efforts to convene meetings comprising traditional rulers, farmer and pastoralist representatives to discuss peaceful coexistence. Farmers are happy with the move and hope such efforts continue.

### Lessons Learned

- Some local governments can make good efforts towards farmer/herder conflict management.
- Proper monitoring and supervision required in order to build trust and confidence.

### Nassarawo-Nabordo

This settlement is a consequence of the Jos crisis. In September 2001, pastoralists were attacked by Berom farmers in Plateau State which resulted in a mass exodus of pastoral Fulbe into Bauchi State for safety. The Ardo of the settlement and his people are of Kacceccere'en clan and were settled in Kuru-Babba for over

100 years before the crisis. Other clans who migrated with them include the Bodi'en, Jauranko'en, Sisilbe, Mbulanko'en, Yillarbe and Toroo6e.

The pastoralists on arrival as refugees were given prompt attention and resettled in forest reserves or community grazing areas. Water and schools were provided by the Bauchi State Government. Although pastoralists have lived well over a century in Plateau state, they were never recognized as indigenes, in spite of the fact that some the pastoralists hold certificates of occupancy. Recovery of such lands may not even be advisable following the circumstances surrounding the crisis. However, there is a need for full compensation for the lands lost by the pastoralists. This should be undertaken by Plateau State Government. Most pastoralists are not planning to return to Plateau State even if the situation calms down. They think the reception accorded them by the Bauchi State Government is attractive enough to retain them on a permanent basis. Their livestock move to the south especially Jengre and Saminaka [Plateau and Kaduna states] in the dry season and return to base camps in the wet season. Crop damage in the fadama lands during the dry season grazing is amicably settled between the farmer and the pastoralist.

Relationships between the settlers and transhumant pastoralists are presently good. These transhumant pastoralists are from Gorkanko'en and Yabaaji clans. They only stop for more than two days in the area and continue their southward journey in the dry season and north ward at the beginning of the rains.

### **Sabon-Garin Kwaga**

This settlement was originally established by the Tul people who are considered the indigenes of the area. Other ethnic groups that migrated to join them include; Fulbe, Gusu, Izere, Ngas and Kwol. The pastoral Fulbe clans include; Kacceccere'en, Gereji, Jauranko'en, Yasanko'en, Gorkanko'en, Bodi'en, Galeji, Daneeji, Ba'aji, Yanaji, Bogoyanko'en and We'we66e. Some of the clans were already settled in the area before the Jos crisis while others migrated into the area afterwards. Their livestock spend the dry season in some parts of Plateau, Nassarawa and Kaduna State and they return during the wet season. Only youths travel with the livestock in the dry season while elders remain at base camps.

The main cultivators of the fadama land are the Tul, Fulbe and Hausa. The Tul started fadama cultivation 20 years ago. The other ethnic groups joined them as they arrived. Each farmer owns the piece of land he is cultivating. The Tul, who are indigenes of the area, have not laid claim on the fadama land. The Tul relocated from Tulei and do not claim the fadama land in the new area. However, this is only applicable to those considered migrants but have settled in the area for some years. The Hausa migrants from Kano and Kaduna for dry season cultivation only are given land on a leashold basis. Even pastoral groups cultivate the fadama lands during the dry season. Vegetables are cultivated by all groups. A market is readily available in Jos or along the highway. As in many other places, land is not commonly sold. After the *shaduf* irrigation by the Tul, pumps were introduced by the Bauchi ADP and some farmers have bought their own pumps. This area is very rocky and stony and erosion is not a problem.

General fishing takes place in the big rivers. Smaller ponds owned by the Tul are reserved and protected. At times they are left for two to three years before fishing takes place in the context of a festival.

## **Conflict And Conflict Management**

In cases of crop damage, the village head intervenes to resolve the matter. The payment is normally twofold, one portion going to the farmer while a token goes to the traditional ruler. Transhumant pastoralists arrive and continue on their way without delay; conflict is rare. Crop damage cases are rarely forwarded the police and courts. Stock routes are defined and farmers instructed to keep off. Any farmer who encroaches is asked by the traditional ruler to vacate otherwise action is taken against him. Watering points and grazing areas are protected.

### **Lessons Learned**

- Pastoralists may also be fadama farmers with secure tenure of the plots cultivated.
- Good relationships exist between farmers and herders.
- Clear agreement on stock routes, watering points and access to grazing in fadama area has facilitated peaceful coexistence between different land users.

## **2.6 Cross-Border Movement<sup>16</sup>**

### **2.6.1 Introduction**

One of the major issues in trying to both understand and resolve natural resource conflict in West Africa is the issue of cross-border movement. Although nation-states are addicted to a rhetoric that makes reference to ‘their’ population and ‘the national herd’, this is remote from reality on the ground. Most pastoralists and mobile fishermen do not have a strong investment in a particular country and will move rapidly to wherever there is pasture for herds or fish to be caught. Many such migrants hold identity cards for two or several states and move fluidly between them. Indeed, a risk that Nigeria faces is that as conditions for pastoralists become more uncertain they will either respond by ceasing to migrate in Nigeria or else become ever more aggressive in pursuit of their access to resources.

For this reason it is worth understanding the patterns of cross-border movement of nomadic resource users. These can be divided into three rough categories;

Pastoralists	Largest-scale and best-documented movement
Fishers	Widespread, less markedly seasonal, poorly known
Dry-season farmers	Especially in the northwest, probably quite small-scale

Of these, pastoralists represent the most important category in terms of conflict and thus of economic losses. However, they are also much the best-known. A more realistic picture could be developed if fishers and migrant dry-season farmers were also investigated to the same level.

### **2.6.2 Pastoral cross-border movement**

One of the staples of the literature on pastoralism in Africa is maps which show the seasonal migrations of a particular group. Ideally, they mark dry and wet season grazing sites and perhaps a transit point. While such maps may have validity in other parts of the continent, in Nigeria at least they represent a major distortion of reality. No pastoral group encountered had a transhumance route that could not be altered rapidly; indeed movement plans are often changed in the course of migration. One of the demonstrations of this is the gradual southward relocation of the pastoral herds, as the semi-arid zone is increasingly cultivated. The main driving force of such colonisation is experimental migration to underexploited regions.

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<sup>16</sup> This section is adapted from Blench (1996a)

It is true, however, that the scale of pastoral cross-border movement is extensive. Herders in the arid Sahelian region move south every dry season to find water and pasture for their herds. Pastoralists all along the northern borders of Nigeria appear to have relatively untrammelled movement between neighbouring countries, especially Niger, but also Benin, Burkina Faso, Chad and Cameroun. In many ways, it would be remarkable if the situation were otherwise, since the borders are long, generally remote and difficult to police. To try and put a scale or estimate the volume of this cross-border movement is difficult, but the National Livestock Resource Survey (NLRs) provides data on seasonal fluctuations within 1990, as cattle populations were estimated during both wet and dry seasons. The maximum number was 14,800,000 falling to 12,900,000, an intra-annual fluctuation of nearly two million cattle or 15% of the mean annual cattle population. Other species, especially small ruminants, camels and donkeys show some seasonal fluctuation, but the scale is very small compared with cattle.

These pastoralists are not, of course, undifferentiated herders, but represent specific ethnic groups, with particular production practices. The main pastoral groups in Nigeria are shown in Table 9;

**Table 9. Pastoral Peoples of Nigeria**

		□□□□□□□□□□	
<b>Arabs</b>			
Baggara	South of Geidam		Cattle
Shuwa	Eastern Borno/Cameroun		Cattle
Uled Suliman	Komadugu Yobe valley		Camels
<b>Fulbe*</b>			
Anagamba	Northeastern Borno		Cattle
Bokooloji	Northern Borno		Cattle
Maare	South-eastern Borno		Cattle
Sankara	North-western Borno		Cattle
Uda'en	North-Eastern Nigeria		Uda Sheep
WoDaaBe	Northeastern Nigeria		Cattle
<b>Kanuri Group</b>			
Badawai	Central Borno		Cattle
Jetko	North of Geidam/Niger		Camels
Kanuri	Borno		Cattle
Koyam	South-Central Borno		Cattle
Manga	North-west Borno		Cattle/Camels
Mober	North-Eastern Borno/Niger		Cattle
<b>Kanembu Group</b>			
Kuburi	Extreme north-east Borno/ Niger		Cattle
Sugurti	Lake Chad shore		Cattle
<b>Saharans</b>			
Teda (Tubu)	Northern Borno/Niger		Camels
<b>Berber</b>			
Twareg	North of Sokoto/Niger		Camels
<b>Others</b>			
Yedina (Buduma)	On Lake Chad		Cattle

Source: adapted from RIM (1992, III)

\*Only a few representative groups noted. °Almost all groups herd small ruminants

Of these groups, the Fulbe and the Uled Suleiman are the most exploratory. The Kanuri and other groups seem to stay within their traditional orbits and there were no accounts of their unexpected appearance in places south of their usual migratory routes. The Uled Suleiman in particular seem to be moving further south every year, seeking browse for their camels, and there was at least one report of a herder using a four-wheel drive to manage the stock, which is extremely unusual in Nigeria.

The single most important reason for both exceptional and regular migration is the quest for pasture and water for the herds. Rainfall increases further south and the vegetation becomes more abundant. The disadvantage of increasing humidity is the higher susceptibility of animals to disease, especially skin problems such as streptothricosis. Movement, especially in remote areas, has the advantage of constantly presenting the herds with a new source of food, and keeping them away from pathogens potentially present in neighbouring herds.

This type of movement is by no means inevitably north-south. The desiccation of Lake Chad (Blench 1991b, 1994) has created a 'new' pasture resource that has attracted pastoralists from the surrounding countries, some of whom now move north or east in the dry season. However, the importance of maintaining the herd is such that pastoralists are willing to risk the depredations of biting flies to gain access to the humid grasslands.

In contrast, the Hadejia-Nguru wetlands, between Jigawa and Yobe states, supported a very large seasonal cattle population until recently. Most of the cattle were owned by Fulbe and Manga who migrated from Niger every dry season, establishing regular transhumance routes and exchange relations with local farmers. The impoundments on the Komadugu-Yobe system have dried up much of the region, forcing the herders to become 'nomadic', i.e. seeking pasture and water further south in Nigeria by scattering throughout the region.

A major constraint on the ability to use pasture is access to water. Northern Borno, for example, is mostly rangeland, and potentially could support very large cattle populations. However, the absence of rivers makes much of this region dangerous for herders, who must move between wells and boreholes to water their cattle. As many of the recently installed boreholes have diesel-driven generators susceptible to maintenance problems, transhumance through this region becomes a risky enterprise.

Pastoralists' single greatest anxiety is the spread of epizootics within their herd. Rinderpest or CBPP can wipe out almost a whole herd, and there is virtually nothing that can be done once they take hold. Almost all pastoralists are aware that vaccines for these diseases exist, and can effectively protect their herds if administered correctly. However, their fear makes them potential victims of confidence tricksters, as well as liable to move at short notice.

Pastoralists have a relationship with the veterinary services in Nigeria which may be best described as adversarial. The prevention and control of the major epizootics, is the prerogative of the federal government, which has received EC assistance for disease control. Rinderpest was virtually eliminated in West Africa in the 1970s, with the JP-15 vaccine. However, pools of infection remained, and in the early 1980s, complacency about the vaccination of calves allowed a new major outbreak to take hold. The campaign in Nigeria has been described by a veterinarian who took part (Wosu 1989), whose account suggests that pastoralists' fears were largely justified.

The consequence of this is that they are attracted to the veterinary services offered in neighbouring countries, especially the Republic of Niger. By their account, the veterinary services in Niger offer a reliable vaccination programme, and maintenance of the cold chain that appears to protect their herds. This has to be paid for in Cfa, a harder currency, which is a financial burden if stock sales are in Naira. Nonetheless, the value of protecting the herd is such that many pastoralists regularly drive their herds, or at least the animals

in need of vaccination, across the border. Many appear to have acquired identity papers for both Nigeria and Niger, and in some cases, corresponding wives in both countries, to assist them in gaining access to the animal health services.

### **2.6.3 Livestock trade**

Nigeria is the most common destination for traded livestock in West Africa. The combination of wealth and large-scale urban demand in the humid zone has the consequence that demand far outstrips supply within the country. As a result, stock is brought in across almost all the land borders from Benin, Niger and Cameroon. Cattle predominate in this trade, which is on the hoof, although small ruminants, camels and donkeys are also moved. Once in Nigeria, the animals are sold in large markets, trucked to the south for sale in the major cities.

Livestock marketing in Nigeria has remained almost entirely in the hands of the informal sector, despite attempts to intervene from State and Federal institutions. An unquantifiable but important fraction of Nigeria's meat supply comes from neighbouring countries. Not all these animals pass through official control posts, and even the data from these posts is not always reliable. This situation has been affected by the fall in value of the Naira in relation to the Cfa. To put this in context, in 1986, before the introduction of SAP, the Naira was worth approximately 1US\$. In January 2004, the *bureau de change* rate was 150 Naira to the dollar. Even though the value of the Cfa was halved in relation to the French franc in early 1994, real prices for stock exported from the Sahelian countries have fallen sharply. This has affected cross-border sales to an unknown extent, but conversations with traders suggest that cattle numbers may be as low as one-third of the levels in the early 1980s. Despite this, the existence of large pastoral zones in Niger and Chad that cannot produce crops suggests that imports from the Sahel will continue simply because there is no other outlet for their production.

Another irony is that the changing internal economy of Nigeria has expanded the import of other livestock species, notably donkeys and camels. Donkeys were the usual work animals in northern Nigeria before the advent of cheap motorised transport. The expansion of the economy in the 1980s brought pickups and motorbikes to even the most isolated rural areas and effectively replaced donkeys. Even breeding females were sold or died and donkey use went into abeyance. However, with the rising cost of transportation, donkeys have again become economic and there is an attempt throughout the north to recover breeding nuclei. The principal source of fresh animals is Niger, where donkey breeding remains a major activity. The result has been the evolution of new donkey markets on the international border, as well as increased sales by pastoralists from Niger who come down to Nigeria in the dry season. This is also true for camels, which are widely valued as work-animals in semi-arid Nigeria, although they are too expensive for most farmers. Moreover, camels will not breed in Nigeria, so they must be bought afresh when they are exhausted.

## **2.6.4 Consequences of pastoral cross-border movement**

### **2.6.4.1 Pressure on natural resources**

Free movement of pastoral herds can have two alternative motivations; either it spreads the grazing pressure on individual pastures so that they are used as evenly as possible, or it allows unprecedented numbers to converge on scarce resources. The second case is one version of the 'tragedy of the commons'. In practice, the latter seems to be the case. The high-altitude grasslands in the Middle Belt regions constitute some of the most attractive grazing in West Africa. Cameroon has a series of such grasslands along its central spine, while in Nigeria the Mambila Plateau is the most conspicuous example. The Mambila was probably first reached by expanding pastoral herds coming in from the Bamenda grasslands in the 1890s (Blench 1991a). With no competition for pasture, the herds rapidly expanded to fill the plateau. By 1983, overgrazing had caused the disappearance of the soil on many hillsides (RIM 1984). By 1990, the population had undergone a major slump because of the degradation of the range (RIM, 1992, III).

A situation with similar potential for degradation through common access to pasture is the floor of Lake Chad. The current state of affairs is described in more detail in Blench (1991b), but essentially the Lake has all but disappeared, leaving a swampy carpet of pasture that is both an attractive fodder and is unclaimed by traditional 'owners' as it was not previously available. This has attracted herders from all the countries bordering on the Lake and during 1990 cattle densities were higher than any other survey site in Africa (RIM, 1992, II). Without controls, the pasture is likely to degrade in the same way as the Mambila grasslands.

### **2.6.4.2 Disease Control**

The porous borders and virtually free movement described above have the consequence that disease becomes extremely difficult to control. If there is a residual pool of a pathogen anywhere in West Africa, it is virtually impossible to prevent its transmission. This was exemplified by the rapid spread of the rinderpest epidemic in 1983-4. Despite clear indications of its presence in neighbouring countries before it reached Nigeria, there was no mechanism to prevent it crossing the border and causing considerable mortality.

Another more long-term problem is represented by schemes to eradicate tsetse flies and the associated trypanosomoses. Trypanosomosis is still prevalent in many parts of the Nigerian Middle Belt and causes debility, low productivity and death in affected herds. The risk can be reduced by eradication of tsetse flies, through spraying, trapping or sterile male release. However, such operations are expensive, and only worthwhile if re-infestation can be prevented. Wild animal vectors, such as bush-pig and antelope, are less common than formerly, and cattle are now the principal agents bringing tsetse flies back to an area. Needless to say, tsetse-free regions of bush attract herders from long distances who frequently bring with them the flies, thus making the region unusable again. This situation has been most problematic along the Nigeria-Cameroon border. Both countries have had tsetse eradication programmes in selected regions. However, these have been co-ordinated neither in space or time, and as a result, pastoralists in both countries have moved across borders to sprayed areas and caused re-infestation.

### **2.6.4.3 Markets and tax collection**

Since livestock can be moved on the hoof and there is no effective means of registering herds, cattle dealers and traders frequently move their stock from Francophone countries bypassing official channels. Recognising this situation, the Nigerian government has found it more practical to collect taxes at points of collection and sale. In Nigeria, most state governments have re-imposed a *jangali* tax on movement, as well as charges for markets and veterinary posts. Within Nigeria, most cattle are moved in trailers along arterial highways, making the collection of taxes simpler.

Despite this, there are clearly financial advantages to traders who can move stock outside official channels, and the consequence is that there are many illegal and unmarked stock-routes across the international borders. These often terminate in unregistered bush markets, where animals may be bought and sold without papers.

Since most of the cattle and small ruminants sold in Nigeria are intended for slaughter, it is less advantageous to move them through the clandestine trade, as animals must enter the official trade network in order to be sold in the large markets of the south. However, work animals, especially donkeys and camels, are destined for villages in the north and can be sold by private treaty without government intervention.

### 2.6.4.4 Conflict

All these factors have had one very significant consequence, namely an increase in conflict. As herders are under greater pressure to find water, pasture and veterinary treatment for their animals they are constantly trying to find ways to enter new zones. Demographic increase has made these zones problematic as they are now competing with farmers for the same space. The legal and administrative system is now against them and the products they have to sell are worth less and less. Desperate herders resort to increasingly desperate measures. The greater ease with which modern weapons can be obtained clearly can only exacerbate matters.

At the same time, potential religious conflict is being stoked up by politicians for dubious ends. Pastoralists are by and large Muslims, whereas many of the people they move among are Christians or traditionalists. It is relatively easy to reframe these natural resource disputes as conflicts of religion, especially in the present climate of dispute over Shariya law. The failure of government to act decisively on these issues has allowed this type of influence-peddling free rein.

### 2.6.5 Mobile fishing people

Fishing is practised on a small scale throughout Nigeria by all communities with access to water-bodies and fish represents the single most important source of protein for most Nigerian populations. However, there are also specialised fishing groups within the country and beyond its borders who make their entire subsistence from aquatic resources, and in some cases do not cultivate, exchanging fish for staple foods. Fishermen are even better placed than pastoralists to make long-distance movements as they have transport, although surprisingly few use motorised boats on the Niger system proper. Outboards are common in the Niger Delta and Cross River systems.

Mobile fishing populations are found both in the Niger Delta and on the Niger-Benue system. Table 10 shows the main groups occurring in Nigeria;

**Table 10. Migratory fishing Peoples of Nigeria**

<b>Ethnic Group</b>	<b>Language</b>	<b>Location</b>
Ijo	Ijo	Niger Delta
Efai	Efai	Islands off Calabar and into Cameroun
Bacama	Bacama	Benue river from the confluence to Cameroun
Kakanda	Kakanda	Niger-Benue confluence up to Yola
Sorko	Sarkanci	Fishing people on the Niger and Lake Kainji
Laru	Laranci	Fishing people on Lake Kainji
Lopa	Lopanci	Fishing people on Lake Kainji
Zarma	Zarma (=Songhay)	Farmers in Kamba area but migrant fishermen on the Sokoto-Rima system
Reshe	Reshe	Fishing people on the Niger and Lake Kainji
Jemani	Nupe ?	Fishing people on the Niger and Lake Kainji
Arawa	Hausa	Migrant fishing peoples, settled further north

**Source:** author's fieldwork

Studies have so far encountered few cases of direct resource conflict with other groups. Fishing peoples almost always operate open resource systems, except in cases such as the Hadejia-Nguru wetlands where ponds are individually owned. The main conflicts arise over types of fishing gear that deplete fish-stocks, poison water bodies or are otherwise undesirable. Enforcement of regulation in this area is best left to the fishing people themselves. Attempts by Local government to intervene have generally been unsuccessful.

### 2.6.6 Migrant dry-season farmers

The whole culture of dry season cultivation has been spread by seasonal migrant farmers and they have played an important role in informally training a wide range of upland farmers in the techniques of *fadama*. The major group responsible for this are the Hausa from Sokoto and Kebbi, mentioned in numerous interviews as far as the Cameroun border. Another group of migrant cultivators found only in the west of the country are the Zarma from northwest Nigeria and Niger. The Hausa were also the first group to spread knowledge of the use of pumps when these began to be sold at the end of the 1960s.

Floodplain cultivation was unknown throughout the Middle Belt until this type of seasonal migration took off in the colonial era. In the early period, Hausa migrants were given land either permanently or on lease for nominal payment. In some cases, the attractions of their dry-season locale were so great that whole households moved permanently, as for example in the Hadejia-Nguru wetlands. As perceptions of riverine lands have changed, so has the value of the land and migrants who did not secure their claim are now finding that their land is being retained or reclaimed by the resident populations. In some ways this is unjust, as residents were making no use of the land along the rivers; their claims are actually recent constructs. But they are residents, they have political and administrative power and by and large, expropriate dry season cultivators accept their fate. The surveys encountered few cases where there had been conflict over this issue.

## IV. Synthesis and conclusions

### 1. Traditional rulers and CPRs

The survey of conflict issues in relation to fadamas is intended to broaden the database for development planning and provide examples of both negative and positive situations as a guide for policy. Some issues

encountered were entirely new and others threw new light on experiences already recorded in previous case-studies.

Broadly speaking, in Taraba and Borno, the authority of traditional rulers is still respected and they are able to enforce resource-sharing agreements as well as those relating to CPRs, such as restraints on fisheries. In Gombe and Bauchi, there is more and more distrust, in part driven by the increasing power of local government. As a consequence, there are much higher levels of resource conflict, with marked increases in violence between seasonal migrant herders and resident farming populations.

Action by traditional rulers to work with different stakeholder communities is also variable. Where action has been taken to form task forces and work for co-operation, results have generally been good, although less so with long-distance migrants who are simply absent for consultation. But in some cases, matters have been allowed to deteriorate, and armed conflict is now an annual matter.

A trend that is so far variable in its incidence is the sale of land. In many areas, *fadama* lands were originally considered to be of little value, and were therefore allocated freely to migrants, especially from Hausaland, who requested them. However, as local populations learnt the value of riverine plots, the loans were abrogated and the land is now leased or sold. Upland areas, especially for grazing, were also allocated to pastoralists and again these have been withdrawn in some cases. In the Shani area of southwest Borno, all land sales have been forbidden and this has had an important effect on reducing conflict.

A surprising finding was that the distribution of *fadama* cultivation is very uneven. Areas where there are abundant flood-plains, especially along the Benue river, are still relatively unexploited in terms of dry-season cultivation and most land is in the hands of fishing and pastoral communities. Communities specialised in livestock trading and mobile fishing peoples were encountered who made no use of adjacent *fadama* lands.

There is considerable evidence for environmental degradation throughout this region, brought about by deforestation and inappropriate cultivation techniques. The major consequences for *fadamas* are;

- flooding, which results from rapid runoff of rainwater into rivers once trees have been lost
- water deficits, due to excessive takeoff and widening of the channel, causing high levels of evaporation
- soil loss due to collapses of the riverbank
- mineral leaching due to excessive runoff
- replacement of diverse grassland with monospecific weed flora
- biodiversity reduction due to degraded habitats

There is no evidence that *fadama* users were given any significant environmental advice through the ADPs under *Fadama I* and no indication that environmental issues will be taken seriously in *Fadama II*. None of these issues form any part of the project documents.

It is useful to distinguish between; pre-emptive measures which serve to avoid conflict occurring, low level resolution / mediation to prevent escalation of conflict which does occur and more formal measures to resolve escalating conflict. **Table 11** shows an inventory of these mechanisms;

**Table 11. Conflict management mechanisms in use**

Mechanism	Comment
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## Natural Resource Conflict in North-Central Nigeria: Bibliography

Traditional leaders	In many areas the authority of traditional leaders has been eroded by development of local government and is also affected by political factors. Where authority is supported (e.g. Emirate of Yauri) this has proved to be the most effective mechanism for low level mediation
Community opinion leaders	Can play an important role in minor conflicts intra- and inter-society where traditional mechanisms are recognised
Leader to leader (inter-society)	Dependent on continuing community recognition of authority and institutional support, can provide successful low level resolution / mediation
Man to man (inter-society)	Depends on recognition of rights / needs of the other which is facilitated by regular social and economic interaction
Hospitality committee (inter-society)	Effective mechanism in the Hadejia-Nguru wetlands to pre-empt conflict between farmers and incoming pastoralists
Woman to man / women to men	Women can exert an important peace-keeping influence over their own husbands to avoid escalation of conflict. Women opinion leaders can be called on to advise on 'male' conflicts (intra- and inter-society) as well as domestic conflicts
State conflict resolution committee	Where this mechanism is invested with sufficient authority and comprises appropriate representatives, it can be effective in promoting cordial inter-societal relationships and its arbitration is accepted by all (Yauri)
Associations	Associations formed by communities to access funds from donor projects such as Fadama I /ADP practice have not empowered members to raise a collective voice. Associations which have developed organically seem to be stronger and more inclined to develop co-operation with other associations / groups. In Yauri associations operate more like unions, representing members' interests. Capacity building to develop this social potential of all associations is indicated.
Police / Courts	Seem always to favour the farmers over the pastoralists, in accordance with the general discrimination observed against the latter group
Military intervention	In situations of violent conflict military intervention is appreciated by whichever community has recourse to it, although obviously this is not a desired / long-term solution. In Imo the military barrack at Obinze provides safe haven for Fulbe and Hausa groups. In Gombe and Bauchi states, soldiers have taken action against violent Udawa migrants
Occupational agreements	Traditional fishing conflict management mechanisms provide a pre-emptive / low level resolution model for other occupational groups to learn from - although new problems with supply of fish / depletion of stocks raise the need for new solutions/ regulations
Sound extension work	Working with all groups equitably and helping to provide appropriate support for development in terms of practical solutions can pre-empt conflict
Credit facilities	Equitable access to credit which improves livelihoods can reduce competition on other resources
Education for children of migrant communities	Should help solve problems in the longer term

## 2. An institutional framework for conflict management

The key elements of an institutional framework would include the following:

- a. Identification of a responsible body or bodies within each state to carry out facilitation. In some states there may be neither an ADP nor an NGO with the appropriate capacity and facilitation would have to be contracted out to an out-of-state body.
- b. Whatever body is chosen, it needs to be engaged on a trial basis initially and to have a contract to gradually devolve responsibility to a locally constituted group.
- c. To identify at an early stage key language skills required by facilitators in different parts of the country and to take steps to begin training individuals with those skills.

- d. To contract Nigerian researchers to provide a more in depth descriptive account of resource conflicts
- e. To create networks of stakeholders in each state with an interest in equitable resource use and the means to meet and discuss it on a regular basis.

How effective will the proposed approach to resource use plans be in ensuring the success of development interventions? Significant conclusions that emerge from the study are that;

- a. There is significant variability in social, economic, ecological parameters both within and between states and that a 'one size fits all' approach is unlikely to yield positive results. However, conflict is usually greatest where populations are most dense and competition for *fadama* land highest.
- b. There is an absence of descriptive literature on the current situation and much existing material is seriously out of date: this highlights the need for both case studies, systematic research and careful situation analysis to be carried out by key stakeholders in each state to underpin future planning
- c. The degree of conflict between different resource users ranges from insignificant to extremely tense, but conflict between pastoralists and farmers far outweighs all other types of resource conflict in frequency and importance
- d. Traditional rulers undoubtedly play the most significant role in both managing conflict informally and arranging peace-making meetings when matters get out of hand. However, their power in the community is highly variable and in some areas they have been opposed by youth groups, while elsewhere their power is being subverted by local government officials. Nonetheless, they are more accountable and responsible than any other group encountered during the survey, but they get little support from official channels, notably the state governments. Existing mechanisms of conflict resolution work best when competition for land and water resources is at low levels, but some communities have developed impressive inter-community stratagems to reduce potential problems. There seems to be little correlation with other categories of social cleavage, for example, across the religious divide.
- e. Existing personnel charged with agricultural extension often have limited knowledge of the situation on the ground and attitudes to farmers and pastoralists that are unlikely to produce convincing analyses of local situations: capacity-building at all levels is indicated as a priority
- f. Women (and children) play an active part in *fadama* use and family / community livelihoods and are directly affected by conflict. Mechanisms need to be developed which enable women's voices to be heard, their specific needs to be addressed and their role in conflict resolution acknowledged and strengthened.
- g. There are few if any trained sociologists or facilitators with command of key minority languages relevant to bringing together often opposed sections of the local community.

Given this state of affairs it is important to recognise that planning and training of personnel should be conceptualised within a relatively extended time-frame and that phasing of operations is essential.

Resource use plans or local development plans developed in a participatory manner can only be valuable if pre-conditions exist to bring together different resource users in equitable fora. It is abundantly clear that this situation only obtains in some regions of the country. For example, in some LGAs visited in Kebbi State and Imo State, where farmers are taking strong action to utterly exclude pastoralists from the *fadamas* and where accusations of vandalism, theft and sabotage are common currency, it will take a great deal more than good intentions to make such a mechanism functional. As pastoralists have negative experiences of agreements being broken, it is essential that any future conflict resolution bodies established are truly impartial and inclusive and have due authority to oversee, monitor and enforce decisions agreed. The pastoralists actually oppose participatory approaches in some places because the likelihood of the parties keeping to agreements subsequently appears to be low.

### **3. The potential impact of resource use planning for conflict management**

The development of *fadama* terrain in Nigeria is underlyingly a conflict between two very distinct conceptions of land tenure. Until recently, almost all river floodplains were treated as a CPR with unrestrained access by farmers, herds and fishermen as well as gatherers of wild resources. As *fadama* land becomes more and more valuable, farmers wish to assert unconditional tenure and simply exclude all other groups. In other words, they wish to transform a CPR into privately owned pieces of land. A similar transition has occurred many times in Europe, notably the eighteenth century 'enclosures', the transformation of common grazing land to private property through the establishment of fences. Until recently, almost all international donors supported this transition to private land ownership on the grounds that farmers would be more likely to invest for the long-term in their land. However, it has gradually been realised by donors that CPR regimes have their own internal logic; their productivity is much greater when managed in common by interlocking users<sup>17</sup>. This is related to another issue, equity, also now more of a concern than previously. The farmers who are able to establish land claims do not necessarily have any 'traditional' rights over the land; indeed they are most likely to be recent migrants. What they do have is articulacy, an understanding of the national bureaucracy and a willingness to use violence in support of their interests. This resembles the 'elite capture' foreshadowed in many documents, but 'elite' is a slightly misleading term; the appropriation of land resources in this way works because of the nature of the production systems of the other occupational specialised groups competing for the subsistence space. It is notable that in Kebbi State, the local community have made efforts to close down schools aimed at pastoralists, presumably because educated Fulbe will pose a threat to their hegemony in the future.

However, it would be unwise to produce a blueprint for blanket application in all states, as circumstances differ both between and within individual states. The provision of capacity building, in an inception phase, to enable states to develop the most appropriate approach to resource use planning, as well as external mechanisms for supporting and monitoring on-going implementation of plans developed during this phase. It also should be stressed that the nature of entities such 'association' 'committee' and 'community' may need to be defined differently in specific situations and the definition would need to be shared by all stakeholders concerned.

Except for a very few, Nigerian NGOs with rural concerns were established in the period when donors were unwilling to fund GoN directly and exist principally to service donors. Their expertise is often embarrassingly limited; Nigerian farmers might well be rather doubtful about paying good money to take their advice which rather subverts the notion of reaching outside the government system. ADPs, due to years of no operating funds, tend to be out of touch with real farmers' needs.

'The objective of the project is, in part, to empower rural communities to take control of their own development agenda.' This sounds desirable, but when the interactions of herder, farmer and fisher are explored on the ground, 'community' is a term that needs closer examination and a more precise context-specific definition. Where there are competing interests, ethnic and occupational differences may be exacerbated and the farmers, because they occupy the land, will take control and use their political skills to exclude herders and fishermen. Similarly, bringing the marginalized and vulnerable groups is one of the greatest challenges.

In some areas, Resource Use (RU) plans have already been developed by communities, especially for sustainable fisheries, without any external stimulus. Provision must be made for understanding and working with / integrating such existing systems rather than simply setting up parallel structures. In addition, many farmers are seeking out non-institutional credit, buying pumps and digging channels to expand contra-season

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<sup>17</sup> This does not mean that governments, who are influenced by political considerations, have also accepted this. In the case of the Hadejia-Nguru Wetlands, the value of the wetlands intact, in productivity terms is nearly ten times its output when the water is impounded and used for growing wheat. But the GoN is influenced by the élites of Kano state, not the remote fishermen in Jigawa and Yobe state and thus the gradual appropriation of water from the Hadejia-Jama'are system proceeds apace.

cultivation with outside assistance. We should be confident that FII is aware of this situation and taking action to ensure that it does not sabotage existing entrepreneurial activity but is able to build on these strengths

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**Table 12. Sample of information that must be collected towards the preparation of an LDP**

Heading	Information		
Name of facilitator	Umaru Hassan		
Date(s) of work	2/10/03		
Name of community and location	Hashidu is in northern Gombe State, on the Gongola River in Hashidu LGA		
Name(s) and livelihoods of ethnic groups 1	Hausa. Settled farmers		
Name(s) and livelihoods of ethnic groups 2	Kanuri. Settled farmers		
Name(s) and livelihoods of ethnic groups 3	Fulani. Settled Fulani farming and herding as well as migrant Udawa and Bokol'en who come for grazing for a few weeks every year. Some of the Fulbe have settled in town and have taken to cultivation as primary economic activity.		
Names and positions of key stakeholders	Sabo Aciro	Chairman-Fadama	FUA Executive
	Ciroma Hashidu	Sarkin Hashidu	Trad.Ruler
	Liman Hashidu	Community member	Farmer
	Galadima Hashidu	Community member	Farmer
	Aliyu Abubakar	Hon.Councillor,Agric.	FUA Executive
	Lawal Sale	Sarkin Noma	Ward Head
Description of the situation of the <i>fadama</i>	Rainfall ca. 600 mm. annually. Vegetation degraded savanna with nearby Forest Reserve now used for grazing. Contrary to many communities visited, Hashidu farmers do not cultivate up to the river bank; hence no erosion was observed. There is a tar road leading to Hashidu but all other access is via bush tracks		
Description of the main users and how they use <i>fadama</i> resources	Fadama cultivation dates back to the late 1960s. It was introduced by the Hausa using initially containers to water the crops and later the <i>shaduf</i> . Pumps were first used in 1974 but only became widespread in 1986 when the ADP gave out some to farmers. Although fadama cropping was originally cereals, vegetables are now the most common because they fetch higher prices. <i>Fadama</i> plots are fenced to protect them from at least small ruminants. The river is used to water livestock and the pastures along the river are grazed by transhumant Fulani every dry season.		
Description of potential or actual conflict(s)	Conflict between the farmers and the transhumants was increasing until the recent intervention from Government. The Udawa are accused of grazing crops and residues without taking care for the farmers; hence there have been violent clashes. The Bokolo'en are friendly and relate well to farmers. Although there are no clearly defined routes and grazing areas within the <i>fadama</i> area, relationships between the two groups are cordial. A Forest Reserve		

## Natural Resource Conflict in North-Central Nigeria: Appendices

Heading	Information
Description of existing conflict management mechanisms	adjacent to the <i>fadama</i> lands is heavily grazed by the pastoralists. Farmers are claiming that the <i>fadama</i> land under cultivation is about one third of the total area and therefore pastoralists still have access to a reasonable area. Minor crop damages by settled pastoralists are resolved between them or through the intervention of traditional heads. But the nearby Fulani communities stated that the District Head had given an over-optimistic view of relations and that when pastoralist livestock damage crops, many farmers now take the case to the police.
Outline of suggestions as to the resolution of these conflicts	A clear allocation of land for pastoralists and farmers will have to be made, preferably using live fencing or other highly visible markers. Approaches need to be made to the transhumants to try and improve their behaviour when they visit.
Projection of environmental and demographic trends	Compared with many other areas visited, there are still opportunities for both grazing and <i>fadama</i> cultivation. However, both parties agree that the human population is increasing and that more farmers are taking to <i>fadama</i> cultivation because of the high prices for vegetables.
Synthesis leading towards the preparation of an LDP	This cannot be prepared on the basis of a single visit