Sharing a Valley. The changing relations between agriculturalists and pastoralists in the Niger Valley of Benin
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Contacts between agriculturalists and pastoralists in Sub-Saharan West Africa

The way in which pastoral and agricultural communities in West Africa are organized has been treated in detail and from different angles by a great number of specialists. In this chapter a selection of the literature on pastoralism and agriculture is reviewed to give the background to the research question. First of all the different ways in which people earn their living are described and the areas in which contacts take place between groups of people who do not earn their living in the same way are identified. The focus then shifts to the ethnic groups and in particular to the group of the Fulbe, the most important pastoral group, which over the course of time has developed different kinds of relationships with agricultural groups. Finally, the literature about the seemingly increasing tensions in the zone of contact is discussed.

The agro-pastoral contact zone

Not all the land in Sub-Saharan West Africa is suitable for agriculture and livestock keeping. In some parts only farming is possible because, for example, the occurrence of certain cattle diseases makes livestock keeping too hazardous. In other places it is impossible to live off farming because the annual rainfall is not sufficient to grow food crops, although livestock keeping is still possible in these areas. Besides the regions that are exclusively suitable for farming or livestock keeping, a large area is suited to both farming and livestock keeping. As this study focuses on the relationships between agriculturalists and pastoralists, the area in which both agriculture and livestock keeping occur are identified in this section.
Map 2.1
Isolines of annual rainfall in mm in Sub-Saharan West Africa 1951-1980
(Source: Adapted from Morel 1992: 59)
An important factor for the distribution of activities is the climate. The special feature of the climate in Sub-Saharan West Africa is its marked zonal nature: The isolines of precipitation form latitudinal zones running from Senegal on the Atlantic coast into Sudan¹. From the northern to the southern zones, the amount of rainfall and the length of the rainy season both increase. As a result of interaction between rainfall, temperature, solar radiation and wind, Jahnke (1982: 17) distinguished four agro-climatic zones: (1) the arid zone (precipitation <500 mm) with sparse scrub and some perennial grasses; (2) the semi-arid zone (500-1000 mm) with tree and shrub grassland with perennial grasses; (3) the sub-humid zone (1000-1500 mm) with woodland, tree grassland and evergreen forest; and (4) the humid zone (>1500 mm) covered with evergreen forest and tropical rain forest (see Map 2.1).

Whether these regions are suited for crop production or livestock keeping is dependent on the agro-climatic conditions that are characterized by the length of the growing period of grasses and crops. Furthermore the occurrence of the tsetse fly (*Glossina*) which causes trypanosomiasis, a deadly disease for cattle, is an important determinant of a region's suitability for livestock keeping.

In the arid zone, the number of growing days varies from 0-90. Cultivation of pearl millet (*Pennisetum typhoides*), the most drought-resistant food crop with the shortest growing cycle, is possible when annual rainfall exceeds 250 mm. Although areas of the arid zones have comparable precipitation, the variability of rainfall makes the zone marginal from the agriculturalists' point of view. Most of the area remains open rangeland for nomadic pastoralists who subsist here by keeping sheep, goats, camels and some cattle because no tsetse flies are present. The zone offers excellent grazing lands for a limited period of time but a high degree of spatial flexibility is necessary. When fodder, produced during the wet season in the arid zone is exhausted, the animals are driven into the next zone, the semi-arid zone.

In the semi-arid zone, growing days vary from 90-180, giving it the potential for rainfed agriculture. Millet, sorghum, cowpea, groundnuts and cotton can be cultivated here. However, rainfall is irregular both within and over the years. This makes production levels low and harvests uncertain. People who subsist on agriculture in this zone have, therefore, adopted flexible land-use methods and have learned to live with good and bad years (Reitsma *et al.* 1992). Livestock are fed on crop residues and grazed on fallow land and bush. By using a system of mobility between the arid and the semi-arid zones, pastoralists are able to exploit widely dispersed seasonal pastures. The regular migrational pattern of pastoralists, which is characterized by north-south movements between dry and rainy-season pastures, is called transhumance. The range of all these movements can vary from around 10 kilometres to several hundred kilometres and corresponds with the availability of pastures and the needs of the different types of livestock such as camels, sheep or cattle (Jahnke 1982).

Towards the south in the sub-humid zone (number of growing days 180-270), there are excellent conditions for the cultivation of cereals and root crops. Severe tsetse-fly infestation used to limit its potential for the exploitation of livestock but there are

¹ The isolines of precipitation in the rest of Africa do not have a zonal nature. They mainly form patterns around spots of high ground.
increasing numbers of tsetse-free areas resulting from the settlement of agriculturalists who have destroyed the flies' habitat so that the proportion of cattle compared to ruminants is on the rise (Bourn & Wint 1994: 11). Infestation of livestock can be avoided by withdrawing in time from areas liable to become infested, i.e. before the region becomes humid enough to attract flies. Finally some livestock breeds are trypanosomiasis resistant.

The humid zone (with the number of growing days at more than 270) is suited for tree crops such as oil palm and rubber. Also cocoa, banana and pineapple can be cultivated here. As in the sub-humid zone, the potential for exploitation of livestock is limited because of the severe tsetse-fly infestation on the one hand and the decreasing quality of fodder on the other. From the arid zones to the humid zones there is a gradient of decreasing quality of herbage and increasing quantity. If the protein content of forage diminishes, it cannot be compensated for by eating additional fodder because digestion then becomes more difficult (Bremner 1982: 121).

As a result of the factors mentioned, there is an unequal dispersion of livestock across Sub-Saharan West Africa. Table 2.1 shows the livestock distribution in Sub-Saharan West Africa per agro-climatic zone. Table 2.2 gives an indication of the increasing cattle density in the sub-humid and humid zone between 1979 and 1994. The data for 1979 are compared to Bourn & Wint's data for the period 1980-1993 which are based on aggregated data from field surveys in Mali, Niger, Nigeria, Sudan and Chad between 1980-1993.

Table 2.1
Livestock distribution in Sub-Saharan West Africa* per agro-climatic zone, as percentage of total livestock species x 1000, 1979

<table>
<thead>
<tr>
<th>Agro-climatic zone</th>
<th>Cattle</th>
<th>Sheep</th>
<th>Goats</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arid</td>
<td>22</td>
<td>39</td>
<td>28</td>
</tr>
<tr>
<td>Semi-Arid</td>
<td>54</td>
<td>25</td>
<td>33</td>
</tr>
<tr>
<td>Sub-Humid</td>
<td>13</td>
<td>18</td>
<td>23</td>
</tr>
<tr>
<td>Humid</td>
<td>11</td>
<td>18</td>
<td>16</td>
</tr>
<tr>
<td>Total</td>
<td>(31,195)</td>
<td>(31,369)</td>
<td>(49,506)</td>
</tr>
</tbody>
</table>

* Benin, Gambia, Ghana, Guinea, Guinea-Bissau, Ivory Coast, Liberia, Mali, Mauretania, Niger, Nigeria, Senegal, Sierra Leone, Togo, Burkina Faso.

Source: adapted from Jahnke (1982)

It can be concluded that the most important area for the development of social contacts between pastoralists and agriculturalists is the semi-arid zone and, increasingly, part of the sub-humid zone. In this zone precipitation is sufficient to allow rainfed agriculture whereas the circumstances for the development of pastoralism are favourable as well. Hence in this study this zone is referred to as the agro-pastoral contact zone.
Table 2.2
Cattle density in Sub-Saharan West Africa per agro-climatic zone in TLU*/km², 1979 compared to the period 1980-1993

<table>
<thead>
<tr>
<th>Agro-climatic zone</th>
<th>TLU*/km² 1979</th>
<th>TLU*/km² 1980-1993 (Bour &amp; Wint)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arid</td>
<td>3.5</td>
<td>4.4</td>
</tr>
<tr>
<td>Semi-Arid</td>
<td>14.4</td>
<td>22.6</td>
</tr>
<tr>
<td>Sub-Humid</td>
<td>6.3</td>
<td>14.8</td>
</tr>
<tr>
<td>Humid</td>
<td>9.1</td>
<td>9.0</td>
</tr>
</tbody>
</table>

* TLU = Tropical livestock unit which is a 250-kg animal using 2,500 kg of forage annually (Peperkamp & Remi 1989: 57).

Source: Adapted from Jahnke (1982) and Bourn & Wint (1994)

Modes of existence

In the agro-pastoral contact zone people have different modes of existence with differing degrees of specialization towards agriculture or pastoralism. In this study 'mode of existence' is defined as the way in which people make their living including both the way in which people interact with the natural environment as well as a set of social relations, culture and norms (De Haan 2000: 18). Pastoralism is defined here as the mode of existence of people who primarily derive their livelihood from the management of livestock on rangelands. The agricultural mode of existence concerns people who make their living from cultivating crops.

Although there are pure pastoralists in East Africa, very few pastoralists live solely on animal products such as milk, blood and meat in West Africa. They may have existed in the past in unusual circumstances but now, almost all of them obtain a considerable part of their nutritional requirements from cereals (Swift 1979). Some pastoralists acquire cereals by barter or trade, others cultivate (some of) the cereals they need themselves. If the pastoralists cultivate their own cereals, the extent to which a pastoral household is self-sufficient can differ from year to year. Sometimes pastoralists are forced to cultivate because a period of several dry years has affected their herd and severely reduced their number of cattle. To prevent the loss of more cattle as a consequence of the barter for cereals, they start to cultivate themselves until the herd has been reestablished. Sometimes pastoralists are forced to switch to agriculture altogether because they have lost all their stock. Galaty (1981) reported on the Wodaabe in Niger who are known for their contempt of agricultural work that they only cultivate occasionally when animal losses are severe. In Cameroon, for example, where the Wodaabe can also be found, they had to overexploit their herd in a period when low cattle prices coincided with high prices for cereals due to a disease affecting cassava plants in 1983. Many ended up in a vicious circle of impoverishment and started to cultivate. When the situation returned to normal they started to restock and resumed the kind of nomadic life they preferred (Boutrais 1990: 87).

On the other hand there are many agriculturalists who do not live solely on agricultural produce. Most agricultural households keep some goats and sheep and an
increasing number keep cattle for draught power. Furthermore agriculturalists are increasingly tending to invest in cattle. In some regions they even have large herds, although they do not always take care of their herds themselves and are called 'absentee owners' (Bassett 1994).

The fact that agriculturalists can keep livestock and pastoralists cultivate crops suggests that there is no absolute dichotomy of pastoralism and agriculture. Some authors even propose considering a continuum or a 'gliding scale' with specialized agriculture and pastoralism at opposite ends (Mace 1993; Zuppan 1994). For this study however, different groups who combine crops and livestock to different degrees are distinguished. To describe intermediate forms, most researchers launch their own classification by choosing variables according to the focus of the study being undertaken. For example, for Bernardet (1984) the distinguishing characteristic is the length of stay in a certain region. He studied a pastoral group in northern Ivory Coast and was concerned with the extent to which the pastoralists were integrated in the region. There are also classifications based on the degree of dependence on livestock. The most quantified definition comes from Swift (1988) who based it on economic specialization. He defined the pastoral production system as one in which 50 per cent or more of gross household revenue (i.e. the total value of marketed production plus the estimated value of subsistence production consumed within the household) comes from livestock or livestock-related activities. Although these definitions are useful for the purpose the different authors had in mind, they do not suffice for the present study.

Of interest is the study by Slingerland (2000) of the integrated and mixed-farming models that are used as the leading models for agricultural development in West Africa. Taking Burkina Faso as a case study, she distinguished six levels of integration between crops and livestock on the basis of agro-climate, ethnography, production goal, ratio of cattle to small ruminants, use of bullocks for traction, and the use of external inputs. She elucidated the dynamics, i.e. the transitions from one system to another, and departed from the assumption that production goals are directly linked to ethnicity, which is defined as 'a form of social identity based on membership of an ethnocultural group'. Schematically she described six pathways via which specialized Mossi crop producers on the one hand and specialized Fulbe animal producers on the other hand can end up in a mixed production system. The different activities are completely integrated, making optimum use of resources and recycling outputs via three different pathways leading to forms of integration (see Figure 2.1).

The six pathways to integration are as follows. A specialized Mossi crop producer can (1) keep some cattle in a non-integrated way; (2) pay a herdsman to keep the cattle he invested in; or (3) keep large numbers of cattle and even go on transhumance with them. The specialized Fulbe animal producer can (4) cultivate to complement the animal produce with cereals; (5) cultivate to 'save' the small herd he has; or (6) cultivate crops to restock in the future and become a mobile pastoralist again.

What the model lacks is a mobility component. For the purpose of this study concerning the relations between different existence groups living in the same area, a typology needs to be based both on a mobility component and the relative degrees of specialization (see Figure 2.2). The mobility aspect identifies different kinds of
Figure 2.1
Possible pathways of integration of agriculture and pastoralism towards a mixed production system, using as examples a Mossi crop producer and a Fulbe animal producer in Burkina Faso
(Source: Slingerland (2000: 73) simplified)

Figure 2.2
A typology of modes of existence according to main production activity and degree of mobility

* In French literature this is called an *agro-éleveur* as opposed to *agro-pastoralist* (see Bourgeot 1990: 33). Others use *éleveur-agro* as opposed to *agro-éleveur* when transhumance is still performed (MDRAC/PDEBB 1990). For an extensive discussion see Monod (1975) and Burnham (1999).
pastoralists residing in the agro-pastoral zone and the specialization aspect distinguishes between modes of existence based more on pastoralism or on agriculture. At opposite ends of the spectrum are settled people living on agriculture only and the nomadic pastoralists who are pure pastoralists and not involved in cultivation. On the basis of these criteria four categories of people whose primary focus is livestock are distinguished: the nomadic pastoralists, the semi-nomadic pastoralists, the semi-settled agro-pastoralists and the settled agro-pastoralists (adapted from Van Raay 1975). In addition three different categories of people whose main focus is agriculture can be distinguished: agricultural stock-keepers, temporary agriculturalists and agriculturalists. In Figure 2.2 the different categories are listed according to their degree of mobility and emphasis on cattle and/or crops.

The nomadic pastoralists are people who specialize in animal production and depend mainly on livestock for their subsistence. They are highly mobile with no fixed homestead in order to be free to track down pockets of good pasture in the variable climatic conditions of the arid zones. Sometimes there is a permanent camp for the elders to which the rest of the household regularly returns. Then they are known as semi-nomadic pastoralists.

When pastoralists partially rely on agriculture but keep their pastoral system mobile, they are called semi-settled agro-pastoralists. They combine a fixed farming base with a mobile herding camp while transhumance is undertaken. The herd's most important product is milk. Some milk-cows are usually left at the homestead while the rest of the herd is away with a number of the male kin.

The settled agro-pastoralists and the settled agricultural stock-keepers are two categories who both farm and keep their livestock around the homestead. There is an important distinction between 'pastoralism' and 'pastoralist' on the one hand and 'animal husbandry' and 'livestock keeper' on the other. Although the settled agro-pastoralist and the agricultural stock-owner might appear to have similar characteristics at first glance and could even be called mixed farmers, those in the latter category consider themselves pastoralists because their socio-cultural identification and associated way of life are tied to pastoralism (Lachenmann 1985: 88). Slingerland (2000) states: "Ethnic identity is intertwined with production goals and labour distribution and hence with motives towards intensification of crop or livestock production". The difference is subtle and refers to concepts of ethnicity and 'way of life' in which animals play a vital part in creating and maintaining social relations.

When agriculture constitutes an important part of the household economy but the main focus is still on stock, which are kept around the homestead all year round, pastoralists are called settled agro-pastoralists. They invest any farm surplus in livestock to prevent having to sell stock in order to buy cereals. Although agriculture contributes to the income of the household, the fundamental orientation remains towards maximization of the herd and stock are important for maintaining social relations. Many ceremonial occasions such as marriages and religious events are associated with livestock transactions.

If the household focuses on agriculture and additionally owns some livestock, the people are seen as settled agricultural stock-keepers. In this case cattle-breeding
complements cultivation, and animals used for draft power and their manure also serve as a means of capital accumulation. However, people's cultural attachment is less pronounced than that of the pastoralists and in most cases milk production is not important (McIntire et al. 1992).

The difference in lifestyle also applies to the categories of *agriculturalists* and *temporary agriculturalists*. Both are households involved in agriculture but do not have any cattle. Although both groups may aspire to owning livestock, the temporary agriculturalist identifies with the pastoral way of life and his main aim is to obtain cattle as soon as circumstances permit. Social organization and material culture is still geared to cattle-breeding. De Bruijn and van Dijk (1995: 19), who studied pastoralists in Mali who had lost all their cattle during the drought of the 1970s and had to depend on other activities, concluded that "being a pastoralist or cultivator is not so much a question of pursuing such and such activities, but is rather a matter of self-definition, of how someone or a group expresses itself and of which activities someone or a group aspires to pursue, or of which are prevalent in cultural values". Later in this study this distinction will allow a better understanding of conflicts between groups, which initially appear to carry out the same activities.

Pastoralists found in the arid zones are nomadic pastoralists by force of circumstance. Their mobility, or transhumance, corresponds in most cases to environmental variability and they enter agricultural zones only occasionally in search of water and pasture. Larger-scale migration into more southerly zones has taken place in response to political events, conflict or illness. Stenning (1959: 67) distinguished these movements from transhumance by calling them 'migratory drifts'.

One of these migratory drifts was caused by colonial occupation. At first, the colonial government took measures that increased security and ended raiding. Pastoralists were able to disperse more widely over the area resulting in a general movement southward (Swift 1979: 28; Blench 1994: 199). Towards the northern part of the arid zone, the pacification of the Touareg pastoralists in present-day Mali in the 1920s enabled other nomadic pastoral peoples to enter their orbit (Burnham 1980).

After independence, migration was due to other reasons like the death of a ruler, the imposition of cattle taxes, price differentials for cattle, the presence of veterinary service and increasing population density. For example the immigration of Fulbe, one of the pastoral peoples in the contact zone, into Ivory Coast in the 1960s was motivated by the opportunity to evade taxes imposed in Mali after independence (Horowitz 1975: 391; Bernardet 1984).

Although it is impossible to define the agro-pastoral contact zone with total accuracy, Map 2.2 gives an impression of the agro-pastoral zone on the basis of the data at hand. It shows the approximate northern limits of rainfed agriculture influenced by climatic changes, the limit of tsetse infestation due to eradication programmes, and the occurrence of the different modes of existence in the agro-pastoral zone.

Over the course of time, the zone has shifted at the northern as well as the southern fringes. In the north the pioneer fringe of rainfed agriculture changes depending on pluviometry. In years of above-average annual rainfall agriculturalists can venture into the traditional pastoral zones. For example in the late nineteen fifties annual rainfall was
Map 2.2
The agro-pastoral contact zone and modes of existence
(Source: Adapted from MAB technical notes 1975: 76, Gallais 1979: 117 and Blench 1994: 202)

<table>
<thead>
<tr>
<th>Modes of existence:</th>
<th>A</th>
<th>Nomadic pastoralism</th>
</tr>
</thead>
<tbody>
<tr>
<td>B</td>
<td>(Semi-)settled agro-pastoralists, agriculturalists, agricultural stock-keepers</td>
<td></td>
</tr>
<tr>
<td>C</td>
<td>Agriculturalists, agricultural stock-keepers with trypanotolerant stock</td>
<td></td>
</tr>
</tbody>
</table>

Legend:
- National boundary
- Northern limit of livestock production
- Approximate northern tsetse limit
- Limit of rainfed agriculture
- Agro-pastoral contact zone
- Approximate southern limit of agriculture with intrusive pastoralism
relatively high and led to a push of the margins of sedentary agriculture to the north. In Senegal, large tracts of land were cleared for groundnut production, resulting in a decline in pasture (Franke & Chasin 1981). Recent research has shown that between 1960 and 1990 a drastic decline in rainfall levels took place with an overall southward movement of the boundaries between the arid and semi-arid zones. Those between the other agro-climatic zones shifted as well (Dietz et al. 2001).

The southerly limits of the agro-pastoral zone have not only fluctuated due to pluviometry but have also changed as a result of tsetse eradication programmes and veterinary techniques. At the beginning of the twentieth century the people in Ghana and Togo as well as in Benin were unfamiliar with the transhumant pastoralists from northern regions. Incidences of trypanosomiasis below the 11th parallel meant that pastoralists with non-trypanotolerant zeboid cattle were confined to regions more to the north. Eradication programmes and the destruction of the natural habitat of the tsetse fly due to agrarian colonization reduced this threat and opened up the pastoral domain further to the south (FAO 1988). During the long periods of drought from 1968 to 1974 and from 1983 to 1985, many pastoralists lost some or all of their animals and fled south with any remaining livestock. Increased human and livestock densities resulted in a subsequently higher demand for fields and grazing areas (Bourn & Wint 1994). Improved veterinary techniques also enabled the movement of the Fulbe into the more humid zones, allowing an expansion of their grazing orbit in areas which had formerly been considered unsafe (Boutrais 1999).

Government policy had an additional impact on the limit of the contact zones, both hampering and stimulating extension. For example to the north, in Niger, the government restricted its extension by intervening in the loss of pasture land to colonization by agriculturalists. In 1961 a law was passed that fixed the limit of the agro-pastoral zone along the 15th degree parallel. North of the limit, the agriculturalists would not be compensated for any damage caused by cattle (Bernus 1974: 141; Diarra 1975: 297; Toulin 1983: 34). To preserve pasture lands in Cameroon, a boundary was set which was not to be crossed by agriculturalists (Njeuma & Awasom 1990: 219) and to the south the colonial government restricted Fulbe movements into the Adamahoua region (Boutrais 1994b: 143).

In Ivory Coast, government policy resulted in an extension of the agro-pastoral zone by inviting pastoralists to enter the country in the north. This strategy ensured the provision of meat for the urban markets in the 1970s (Bassett 1988).

Specialization linked to ethnic groups

The distinction between agriculturalists and pastoralists is linked to ethnicity. Different ethnic groups often have a common language, a comparative frame of reference with other groups and a collective identity sometimes related to a particular activity (see Chapter 3). There are numerous ethnic groups that have traditionally specialized in agriculture such as the Mossi in Burkina Faso, the Bambara in Mali and the Yoruba in Nigeria. Jahnke (1982: 70) distinguished twenty different ethnic pastoral groups
Map 2.3
The distribution of the Fulbe in relation to other ethnic groups in Sub-Saharan West Africa.
(Source: Adapted from Grove 1985: 154)
dispersed over the arid and semi-arid zones of the African continent, most of whom lived in East Africa. Although Maure pastoralists sometimes arrive in the northwestern part of Ivory Coast and Burkina Faso and in Chad and Nigeria some Tuaregs and Toubous occasionally cross the frontier into the agro-pastoral zone of West Africa, only one group of pastoralists, the Fulbe, is dominant in the region\(^2\) (FAO 1988: 5). Map 2.3 shows the distribution of the Fulbe across the agro-pastoral contact zone and illustrates the extent to which they live among different agricultural ethnic groups.

The Fulbe have spread across the continent as a result of pastoral nomadism and military conquest. The distinct physical features of the Fulbe may suggest that they have a Nilo-Saharan origin although this has never been proven. From their putative homeland they went westward towards Senegal and subsequently drifted in waves of migration towards the east over the last five centuries. By the sixteenth century they were in present-day Nigeria and by the eighteenth century they were settling in Cameroon (Fage 1995: 86).

In addition, the Fulbe spread through military conquest and changed the political map of West Africa by joining a series of Jihads from the early eighteenth century onwards. Their spread through military conquest was most prominent through the Jihad of Usman dan Fodio at the beginning of the nineteenth century. In some parts of the zone, for example Cameroon and Mali, the Fulbe still hold political power, whereas in other countries, like Benin, they form marginal groups (Frantz 1981; Boutrais 1994b; Azarya et al. 1999).

The number of people who speak Fulfulde, the language of the Fulbe, is estimated at over fifteen million. Although they can be regarded as one group, there are considerable differences from region to region, for example in social organization and dialects spoken (Eguchi & Azarya 1993). They are referred to differently in different languages. In Hausa they are called Fulani, a name that the British colonial government adopted to indicate the Fulbe. The French call them Peulh, from the way they are known by the Wolof, an ethnic group in present-day Senegal (Kissezounon 1978: 17). In this study, the group are called Fulbe in the plural form and in the singular form Pullo, according to the group's own language.

The criteria to identify the Fulbe are the spoken language and the adherence to *pulaaku*, the Fulbe moral code inherited at birth. The main characteristics by which the Fulbe themselves define *pulaaku* are Islamic excellence coupled with self-control, bravery, generosity and being cattle owners (Dupire 1970; Eguchi & Azarya 1993). In spite of living among other ethnic groups, most of the Fulbe have preserved their

\(^2\) Blench (1999) puts forward several hypotheses in trying to explain the highly uneven distribution of the number of pastoral groups in East and West Africa. His variables vary from the linguistic uniformity of the Fulbe pastoralists, their political centralization, the laterally oriented trade routes, natural ecological differences such as the unimodal rain pattern in semi-arid West Africa, the fact that Fulbe pastoralism co-evolved with arable systems, the elimination of inter-group warfare in the region and the existence of the flexible Fulbe social structure which is not organized according to age-groups as in East Africa but according to social historical sub-groups or clans (*lenyol*). He does not draw a conclusion as to which hypothesis is the most plausible.
identity. Van Raay (1975: 25) attributed this to the fact that more intensive contact with another way of life made the nomadic Fulani more conscious of their traditional values and virtues and physical distinctiveness, "...the preservation of which became a major concern, a focal aspect of their thinking”. He suggests that the 'glorification' of being a pastoralist is derived from the mere threat to the survival of the group among so many other different ethnic groups.

The Fulbe have adjusted to changing circumstances in different ways. The Fulbe in the more northerly zones of Niger have increased their mobility (Frantz 1981) whereas the Fulbe of south Benin have settled and adopted an agro-pastoral mode of existence (Bierschenk 1997). For several reasons Fulbe have always preferred to stay in areas close to agriculturalists' villages due to their mode of existence based on the production of milk and other dairy products. The majority of these products are used for economic self-sufficiency but the rest is bartered against grain or sold to agriculturalists. In order to be able to sell or barter these dairy products the Fulbe need an outlet such as an agriculturalist village not too far from their pasture lands. Additionally, the occurrence of tsetse flies around these villages has been reduced, making settlement attractive.

The main reason why this study focuses on the Fulbe is that they are widely dispersed, mostly in the zone in which agro-pastoral contacts take place; and within the group several intermediate forms of agriculture and livestock keeping exist, as indicated in Figure 2.2.

Relations between agriculturalists and Fulbe pastoralists in Sub-Saharan West Africa

The Fulbe establish contact with the agricultural population either after settling in the agro-pastoral contact zone or during their stay while on transhumance. These contacts have varied significantly in intensity. In some areas nomadic Fulbe have only engaged in exchange relations to barter grain against animal products. In other areas they have settled in close vicinity to villages and have linked up in an intricate network of mutual relations depending on the products or services each side has had to offer the other (Van Raay 1975: 26; Toulmin 1983: 38).

Besides the exchange and barter of milk and animals against cereals, another important relation which exists in the whole agro-pastoral zone is the entrustment of agriculturalists' cattle to pastoralists. If wealth is accumulated by agriculturalists, it is frequently invested in cattle. The lack of a formal financial infrastructure means it is still one of the rare ways of converting savings into a form of capital that yields interest. Especially in the semi-arid zone with its varied rainfall, crop surpluses are converted into cattle. Interest is received in the form of offspring, which can be sold in years of cereal deficiency. Agriculturalists often lack the knowledge and time to take care of their animals. They are therefore entrusted to a pastoralist who incorporates the animals into his own herd and receives milk, a number of calves or money in exchange for the services he provides (Delgado 1979; Oksen 2000). An additional advantage for the agriculturalist is that his wealth is hidden from his relatives who are less inclined to ask
for financial assistance than if his wealth was exposed in his courtyard. It is evident that trust between both parties is essential in such a relationship because the herder takes the animals away for an extended period of time. Other forms of contacts can originate from these relations e.g. invitation to weddings and the granting of credit. Also the agriculturalist can assist his 'Pullo friend' with agricultural labour (Horowitz 1975; Beauvilain 1977; Krings 1980; Bayer & Waters-Bayer 1991; Breusers 1998; Turner, 1999).

Ideally both groups are also linked by the complementary use of the environment. During the dry season the fallow lands and land unsuitable for cropping are used as dry-season grazing areas for cattle. During the rainy season, cattle are grazed in areas far from farmland to prevent crop damage but as soon as the harvest is over the herds return to enter the harvested fields to benefit from post-harvest fodder. In some areas the agriculturalist makes an arrangement with a pastoralist concerning the grazing of crop residues in return for manure for his field. The owner of entrusted animals has the right to recall cattle to fertilize his field and asks the pastoralist with his herd to camp for several nights on his fields. In this way the agriculturalist and pastoralist are gaining mutual benefit and their interactions make it possible to use local resources efficiently. (Hill 1972; Bernus 1974; Horowitz 1975; Diarra 1975; Serpantie et al. 1988; Bayer & Waters-Bayer 1991; Oksen 2000).

The 'manure linkage' does not occur in every region in which pastoralists and agriculturalists coexist but seems especially important in densely populated areas. For example in the densely populated area around Kano in Nigeria where only the use of manure makes permanent cultivation possible, manure is in great demand and the agriculturalists ask the Fulbe to stay on their fallow fields whenever possible (McCown et al. 1979: 315). Another report about Nigeria comes from Waters-Bayer and Bayer (1994: 223) who described the situation in the Abet area where cattle manure is used in ginger growing. Manure is so important that it forms one of the main reasons for seeking good relations with the settled Fulbe. Moreover, agriculturalists invite transhumant pastoralists they encounter in the market to camp on their fields. This is contrary to the situation in Sisilli Province of Burkina Faso where agriculturalists do not appreciate cattle manure and burn it on their fields because they believe it brings weeds (De Boer & Kessler 1994: 47).

The exchange of cereals and livestock products, manure contracts and the entrustment of cattle to the Fulbe are the most important relations and express the complementary nature of the two modes of existence.

Threats to peaceful cohabitation

However, because both groups use the same area, peaceful cohabitation is threatened from the moment pastoralists move into areas already under cultivation and crops and livestock are in close proximity on the same land. In the agro-pastoral zone tensions rise until the harvest is over except in areas where irrigation is practised where there is tension throughout the year. This does not imply that conflicts are the order of the day
but that the potential for conflict is always present. In this respect, Hussein (1998: 23) made a useful conceptual distinction between 'conflict of interest' and 'conflict leading to violent confrontations'. Conflict of interest is omnipresent in cases where resources are used by different stakeholders. In some cases conflicts of interest lead to non-violent outcomes (e.g. arbitration) or in other cases they lead to violent conflict.

In the oldest records available, usually colonial reports, the authorities mentioned conflicts of interest, competition and even confrontations between agriculturalists and pastoralists (Njeuma & Awasom 1990: 219; Zuur 1996; Breusers 1998). An example from the Dallol region in present-day Niger stresses that both groups acknowledge that they have always lived in antagonism. In 1971, the sous-prefect of Birni N'Gaouré, himself of Fulbe origin, replied when in conflict with a deputy of the Djerma ethnic group: "When we talk about the differences between the Peulh and Djerma, nobody can ignore the fact that tension dominates the relation between the ethnic groups, which dates well before the French colonization and which we should try to overcome by improving human relations" (Beauvilain 1977: 58).

Although conflict of interest, resource competition and conflict have been familiar elements in the agro-pastoral zone for a long time, in the 1970a and 1980s reports appeared about conflicts escalating into violent confrontations (Beauvilain 1977: 58; Bernardet 1984: 175; Blench 1994: 208; Guèye 1994: 6). Bassett (1988: 468) reported an incident in Ivory Coast in 1980 when agriculturalists carried out an armed attack and killed eighty Fulbe. In 1991 during an attack by agriculturalists in Niger at least hundred people were killed in the so-called 'Massacre of Toda' (Courrier Afrique, 9 July 1992). More such events have since occurred in Insafar and Foneigada in Niger, with reports even mentioning that 'Hatred seems to have become the most solid linkage between agriculturalists and pastoralists' (Bulletin d'Information Club du Sahel, 13 June 1993).

Why have more conflicts been developing? Hussein (1998), in his well-documented literature review on conflicts in the semi-arid zone, suggests that a distinction should be made between long-term trends (ultimate causes) and specific events (immediate causes). The first important long-term trends are the recurrent droughts that have occurred since the 1970s. Although droughts in agro-pastoral zones are a known phenomenon, the impact of the long period of drought from 1969 to 1974 was exceptional. Agriculturalists as well as pastoralists were seriously affected: crops failed and available pastures decreased leading to famine and death. Considerable numbers of studies on the impact of this period of drought on modes of existence have been undertaken. In comparison with other periods of aridity the impact of the drought of the early 1970s was aggravated by the fact that in the years prior to the drought rainfall had been more abundant than normal. The people had become so used to abundant rainfall that their expectations had risen to the point "that a return to average conditions was considered to be a drought" (Matlock & Cockrum 1976: 238). (See also Mensching 1988: 607; Franke & Chasin 1981; Glantz 1987). The relatively high annual rainfall in combination with the pressure on land resources further to the south had tempted many agriculturalists to farm in the more northerly zones, a region unsuitable for farming in 'normal' years. When the drought struck, these agriculturalists were hard hit and their crops were totally destroyed. Not only were reckless agriculturalists seriously affected.
The pastoralists suffered too although they were more used to handling periods of drought. Developments further south like the extension of cultivated land for cash-crop farming, demographic pressure and the increase of the size of herds prevented pastoralists from increasing their mobility and they could no longer fall back on their traditional coping strategies. As a result, the loss of cattle was enormous even though estimates vary substantially. Oba & Lusigi (1987: 16) reported that in Niger between 1969 and 1974 cattle losses were up to 80 per cent. Franke & Chasin (1981: 156) reported that, according to the FAO, estimated losses were at 39 per cent of the total Nigerian herd between 1970 and 1974.

Considering the repercussions of drought on the situation in the contact zones two factors seem especially relevant. First, droughts led to the increased settlement of pastoralists in the contact zones in order to allow themselves the opportunity to adapt to the changing situation by also performing agriculture (Salih 1992: 128). This increased settlement had repercussions on land use in the zone, leading to more social tensions. Secondly, it led to a migration of pastoralists with severely reduced herds to more southerly zones. While agro-pastoral groups reacted to the drought with increased settlement, other groups reacted by increasing their mobility. Through these migrations, pastoralists entered regions where agriculturalists were not used to living in close contact with transhumant pastoral people. Increasing tensions emerged as competition developed in areas where relationships were never established and no traditional regulation mechanisms existed to help settle disputes (Boutrais 1982; Bassett 1988; Bourn & Wint 1994).

Extending farmland to cultivate cash crops led to dwindling pastoral resources, which intensified the consequences of demographic pressure and drought and contributed to increasing competition for resources.

Development interventions such as the introduction of new technologies for ploughing and irrigation made an impact on resource competition as well (Bayer & Waters-Bayer 1991). Irrigation permitting cropping throughout the dry season thus extends the duration of the period in which competition is high. Large irrigation schemes have deprived pastoralists of their traditional grazing lands because they have only had usufructuary rights over the land. This has created tense situations between pastoralists and agriculturalists (Salih 1992: 129). Even though the introduction of the plough can double the cultivated area, and although the loss of traditional grazing areas is compensated for, in theory, by the possibility of feeding herds on the more nourishing cereal-crop residues, increasing numbers of agriculturalists with livestock are starting to compete for crop residues. Pastoralists have, in reality, lost a lot of their grazing areas (Van Raay 1974: 90; Toulmin 1983: 34; Bayer et al. 1987).

In summary, the continued process of sedentarization among nomads and agro-pastoral groups and natural demographic growth have created an increase in population pressure in the agro-pastoral zone. Growing demand for farming land has led to diminishing areas of grazing and the southward dispersal and year-round presence of cattle in the sub-humid zone, increasing conflicts of interest and resource competition in this zone as well (Bourn & Wint 1994).
A few studies stand out in their consideration of other long-term trends to explain the reason why conflicts are on the increase. Beauvilain (1977: 58) attributed the increasing number of conflicts in the Dosso Valley in the early 1970s to the hatred which had built up over a century of wars combined with a growing pressure on resources. Weicker (1982) investigated the developments in the relationships between nomadic pastoralists and agriculturalists in Senegal's Ferlo region. Because of preferential treatment of the groundnut farmers by the government over the nomadic pastoralists, the situation became tense. Bassett (1988) described the situation in Ivory Coast where the government visibly favoured the pastoralists. Fulbe enjoy land rights despite the objections of the indigenous Senufo crop-farmers who view them as squatters on their land who should be expelled. While the agricultural population is calling for their expulsion, official government policy is encouraging their settlement. Both Weicker's study on conflicts in Senegal's Ferlo region and the studies of Bassett and Bernardet in which conflicts occurring in Ivory Coast are analyzed attribute the situation to market-based government policy. They state that conflicts are not a consequence of dwindling natural resources but are due to external factors, particularly national political economic factors.

In the last few decades in most African countries the production of commercial crops has been heavily stimulated. At the same time governments have failed to sustain the pastoral mode of existence, partly because of their bias against nomadic pastoralism. According to Monod, this is due to "the sedentary nature of the official mentality". He argues that people in power and pastoralists often belong to different ethnic groups and those in government are "dominated by the cultural values of the settled population and sometimes have a contempt for the pastoralists" (Monod 1975: 176; see also Baker 1974: 3). The one-sided promotion of agriculture certainly had its repercussions on the pastoral mode of existence: the mobility of cattle was restricted and access to grazing areas was limited. As a result, the pastoralists' position has been weakened and the interaction between the two groups of people has decreased. These developments have been described by Franke (1981) and Weicker (1982) for Senegal, and Krigs (1980) for Burkina Faso.

Despite this bias of the 'official mentality', it is not always the agriculturalist who receives government backing. If the macro-economic situation demands a policy in favour of pastoralism such a policy is executed, as was already discussed above in the case in Ivory Coast (Bassett 1988) where increased purchasing power led to a high demand for meat. In order to restrict imports of meat, a preferential policy for pastoralists was designed allowing them to settle on agriculturalists' land. During this period, the pastoralists enjoyed a superior economic position and good relations with the authorities.

 Preferential treatment by government of one group over the other has led to deteriorating relations between agriculturalists and pastoralists. From these studies it appears that governments impose policies depending on the macro-economic situation, and sometimes favour the agriculturalists, as in Senegal, and sometimes the pastoralists, as in Ivory Coast.
Another long-term trend which can give rise to conflict is the previously mentioned 'expansion of the contact zone' to the south: the movement of pastoralists into a new zone where agriculturalists are not used to co-existing with them (Blench 1994; Le Gal 1987: 47). Traditional pastures in the northern zones have been increasingly turned over to farming, forcing the pastoralists to migrate south with their herds (Boutrais 1982; Blench 1994; Marty 1993). In zones where relations do exist between agriculturalists and pastoralists there are often institutions regulating access to resources and restraining behavioural patterns. In the zones where agriculturalists are not used to dealing with pastoralists, conflicts are more likely to occur unless there are regulatory mechanisms and institutions to settle disputes between both groups. These long-term trends increase the possibilities for conflict with violent or non-violent outcomes.

The most important 'immediate causes' which increase the possibilities for conflict reported in case studies in the literature are:

(1) **Crop damage**
In studies by Horowitz (1975), Diarra (1975) and Krings (1980), for example, crop damage is the cause of disputes between agriculturalists and pastoralists. Especially in the pre-harvest period of the crop cycle, feelings run high when herds trample down or eat standing crops. Furthermore disputes can arise when negotiations about compensation of the crop damage take place. Pastoralists complain that they have to pay too much, as in the case described in Senegal by Weicker (1982: 103) or agriculturalists feel that they are not receiving enough compensation for any crop damage, as was described by Bassett (1988: 466) in Ivory Coast.

(2) **Contestation of land-use rights**
The blocking of cattle tracks by agriculturalists' fields or the extension of farmland into pasture lands in general is another immediate cause for tension which has been widely reported (Weicker 1982, Blench 1994, Guèye 1994). Bernardet (1984) reported, for example, on rising tensions about agriculturalists' claims on pastoralists' already-fertilized fields. They claim the fields to be their own because pastoralists do not have established land rights.

(3) **Denial of use of water points**
The third immediate cause for conflicts is refusal to share the use of watering points. Especially in regions where water points are appropriated by agriculturalists for irrigation purposes, tension may rise. Also after a period of drought leading to reduced availability of water elsewhere, an influx of pastoralists looking for water can increase tensions and lead to conflict (Weicker 1982; Krings 1980: 70; Bayer et al. 1987).

Although many studies on pastoralism touch upon relations between pastoralists and crop farmers in general terms and specialized studies have been undertaken on the particular problem of conflicts, the earlier cited study of the available literature on conflict in the semi-arid zone (Hussein 1998: 54) reveals that there are no studies to date that present historical data to substantiate the claim that conflict between groups is increasing.
Conclusion

Although it is not possible to define it exactly, this chapter has broadly attempted to define the agro-pastoral zone as the area where people specialized in crop-production and in pastoralism co-exist. From the typology of modes of existence presented in this chapter it appears that this zone mainly includes (semi) settled agro-pastoralists and (stock-keeping) agriculturalists.

Over time, relationships expressing the complementary nature of their modes of existence have been established between both groups. These relationships range from simple exchange relations to intricate patterns of mutual services. However, it seems that competition between the groups is increasing due to different long-term developments. In geographical terms, ecological developments since the 1970s have resulted in an extension of the northern and southern limits of the agro-pastoral zone, creating pressure on resources within the zone. The present study is situated in the southern fringe of the agro-pastoral zone. In the literature, increasing numbers of cases of conflict between pastoralists and agriculturalists are being reported but it is not sufficient just to confirm the hypothesis of increasing conflict. Very few studies are based on a historical view as well as on primary data to assess the background to such tension and violent conflict.

This study contributes to the historical view of the changes in relationships between pastoralists and agriculturalists as a result of long-term ecological, political and social developments in the Niger Valley of Benin. The analysis is presented from the point of view of both the agriculturalists and the pastoralists.