



Universiteit  
Leiden  
The Netherlands

## **From symbiosis to polarization? Peasants and pastoralists in northern Benin**

Haan, L.J. de; Driel, A.; Kruithof, A.

### **Citation**

Haan, L. J. de, Driel, A., & Kruithof, A. (1990). From symbiosis to polarization? Peasants and pastoralists in northern Benin. *The Indian Geographical Journal*, 65(1), 51-65.  
Retrieved from <https://hdl.handle.net/1887/4775>

Version: Not Applicable (or Unknown)

License: [Leiden University Non-exclusive license](#)

Downloaded from: <https://hdl.handle.net/1887/4775>

**Note:** To cite this publication please use the final published version (if applicable).

# From Symbiosis to Polarization ? Peasants and Pastoralists in Northern Benin

Leo de Haan

Anne van Driel and Annettee Krulthof

Department of Human Geography

University of Amsterdam, Amsterdam

---

*The semi-arid zone in northern Benin (West Africa) is an area where rain-dependent farming and (nomadic) pastoralism meet. Under the influence of different external factors, the relationship between pastoralists and peasants has been changing in the past decades. Until recently, there was an interactive exchange between these two groups, based on mutual dependence of their ways of life. This symbiosis provided extra security for both groups in the variable climate conditions. Technological developments as well as further market integration of the peasants have led to increased competition between the pastoralist and peasant mode of existence. Moreover, pastoralism has been under great pressure due to a long period of dry years. As a result of these factors, the tension between the two groups started to rise in the early eighties. Mutual dependence has been reduced and symbiosis has turned into polarization.*

---

## The Karimama and Malanville Region

The Karimama and Malanville region presents a good example of an arena in which the general problem of the changing relationship between peasants and pastoralism can be studied. This area is situated in the most northern part of the République du Bénin (West Africa), and belongs to the administrative districts of Karimama (in the west) and Malanville (in the east). The area is bordered by the river Niger in the north-east, which also forms the national border. In the south west, a band of forest has been placed under government protection, where farming or settlement is prohibited (Fig. 1). So whereas the total area covers approximately 6,000 km<sup>2</sup>, only 3,000 km<sup>2</sup> are available for farming and grazing. With a population of approximately 70,000 inhabitants, the population density for the area available for inhabitation is 23 persons/km<sup>2</sup>. In the region, the population is growing at a rate of approximately 2% per year.

The region is situated in the Sudan climate zone. The rainy season lasts from mid-April to mid-October. Average rainfall is between 800 mm in the north and 950 mm in the south. However, since 1969 these averages have hardly been reached. Moreover, the annual variability is large. The soil is thin and sensitive to exhaustion.

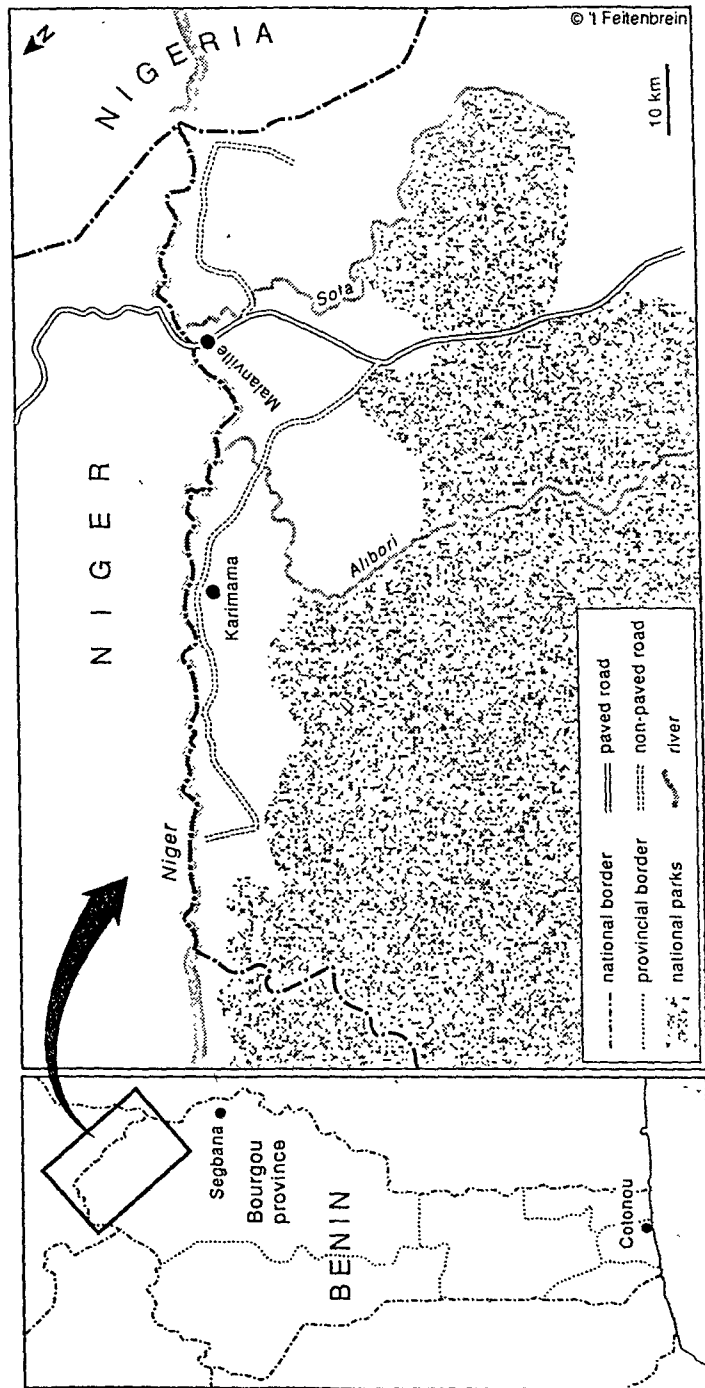


Fig. 1  
Benin and northern Borgou

Most villages are situated along the Niger. In the past 20 years, the river has seldom overflowed its banks, due to reduced rainfall and increased upstream irrigation. That is why fishing in the Niger gradually disappeared (as, by the way, indigo dyeing). The peasants currently use the wide riverbed for growing of sorghum and corn and for irrigated market-gardening. The higher dry, flat land is planted with peanuts, cotton and sorghum. The pastoralists have also installed their *campements* on these plains. In Malanville village, where the north-south asphalt road crosses the Niger (and the border), a large, international market is held every Saturday, where food products, market-garden produce and cattle from the surrounding region are traded, in particular to foreign buyers and buyers from the coastal town of Cotonou.

Most of the food crops are consumed by the producing households. Milk and peanuts (peanut oil) are also sold locally and market-gardening for the national market is becoming more important around Malanville. Cotton is produced solely for export. The labour necessary for agricultural production is provided mainly by members of the household. An exception is the production of cotton, for which hired workers may be engaged.

In the North, only very modest technical resources are used in agriculture and therefore, physical conditions, such as the variable water supply and poor soil quality, have a large influence on production. Living conditions are subject to seasonal fluctuations ['seasonality', (31); 'La vie par saison', (37)]. Towards the end of the dry season, if the harvest is disappointing, the grain stocks run out and milk production is low (36). Shortage time (*soudure*) comes round again.

Important exceptions to the simple agricultural technology applied here, are the use of ox-drawn ploughs and motor pumps. In the past decade, the widespread use of oxen in combination with the thriving production of cotton, has led to a considerable expansion of the amount of land being cultivated. Until recently, there was no absolute shortage of land, but expansion of the fields together with the use of land for farming purposes by pastoralists has resulted in increasing pressure on the environment causing processes of soil degradation, locally known as *Sahelisation*. The use of motor pumps has enabled irrigated market-gardening along the rivers and has lengthened the growing season. The income thus obtained has been used to compensate for the fall in income from rain-dependent farming.

### The Fulani

The Fulani (called Peul in French and Fulbe in their own language) are pre-eminently cattle farmers. In the area under consideration, they total 16% of the population. In the whole of semi-arid West Africa, from Gambia to Lake Chad, these pastoralists and their herds perform transhumance (16). Their herds consist mainly of cows, with some goats and sheep. In North Borgou, the Fulani have fairly permanent *campements*, which serve as home base. It is here that the food is produced and that several members of the household with

several heads of cattle remain during the dry season. During the dry season, the herds can usually be found far south of our area of research, looking for grass and water. After the rains start, they return to their home base to benefit from the young grass on uncultivated land. After the harvest, the animals feed from the stubble fields belonging to the peasants, depositing their manure. When there is nothing left to feed on and the water stocks run dry, migration to the south recommences.

Transhumance pastoralism is assumed to be extensive, in the sense of a low man/land ratio. However, calculations have demonstrated that it permits relatively high cattle densities. Furthermore, transhumance is a way of effectively dealing with the variability of the climate (8, 6, 23, 24, 36).

The main objective of cattle farming is the production of milk for human consumption. The number of cows in a herd is therefore of great importance. Ideally, milk production in the rainy season is sufficient to feed the household and to be sold or exchanged in order to buy sorghum. In the dry season, a number of animals are sold to be able to purchase grain. Only a few bulls are required to assure the continuity of the herd. Any extra bulls are surplus. In this manner, an average of 10% of the herd is disposed of annually (33, 38, 40, 6). Pastoralism, however, remains a fairly risky basis for existence in North Borgou, where, in addition to disease and theft, long dry periods pose a large threat. The main methods of defense are to aim at building up as large a herd as possible, that can move around the region divided into several groups. Another method of great importance is the symbiosis with other societies (23, 33).

Most pastoralists have always grown food crops, mainly sorghum on fields surrounding the *campements*. Now, after years of relative drought and high cattle mortality, the area of cultivated land has been enlarged. Even so, the principle aim of the pastoralists remains the enlarging of the herds (17, 26, 5). For the Fulani, earning an income through commercial agriculture and/or non-agricultural activities does not, as yet, seem to be one of the options in this region.

The head of the household is responsible for the cattle and sheep and organizes the work activities. In most cases, several men belonging to the household migrate with the herd. Only part of the herd is the property of the household head. The rest belongs mainly to other members of the household. Most goats and poultry are owned by the women.

There is a certain stratification among pastoralists based on the size of the herd, but no strong polarization. Often, a poor household can borrow a cow from a relation who is better-off. In the dry season, it can happen that poor households run out of stocks and are unable to buy sorghum. The household then survives on small amounts of milk and gifts. Richer households sell more cattle in the dry season and keep the milk for their own use and to feed the calves.

An additional variable is the availability of sufficient labour within the household to exploit the means of existence. The men tend the cattle and milk the cows. Women care for the members of the household and small livestock. Regularly, the women sell part of the milk, also as butter or cheese, at the local markets. Smaller households sometimes lack sufficient labour resources to exploit their means of existence properly. They are often less mobile and have smaller herds (4).

During a drought, more heads of cattle are sold. Consequently, the price of cattle drops, while sorghum becomes increasingly scarce and expensive. Eventually, also young cows, that are more stable in value, are sold. In addition, the calves are given less milk so that the members of the household can be fed. This, and the fact that a number of adult animals do not survive the drought, causes a drastic reduction in the size of the herd. The number of cattle deaths is higher in densely populated areas and in where herds are less mobile (26, 33). Even though these characteristics do not apply to our area of research, the survey has shown that the number of deaths among cattle was quite substantial in 1973 and 1984. In these arduous situations, the system of mutual support breaks down.

In the past decades, the access to grazing land has been limited and a number of migration routes have been blocked off. Two of the reasons for this is the expansion of cultivated land and the strict guarding of protected forest. Because peasants occupy with market-gardening on land along the rivers, drinking and grazing on the river banks have become more problematic. On the other hand, many Fulani from neighbouring countries have moved to the Borgou with their herds. In the area of research, there are many Fulani from Niger that have been wandering through North Benin since the drought at the beginning of the seventies. It would seem that the combination of these factors is resulting in increased mobility of the herds. The Fulani from the north-west of Karimama, in particular, migrate each year to the far south (150-300 km), cutting through the prohibited forest zone. In situations where there is less pressure, there is also less mobility (for example, in Segbana, about 150 km to the south: (7).

### The Dendi

Most peasants in the selected region are Dendi, originally a tribe of peasants and fishermen (60% of the total population). Farming is mainly the responsibility of the *chef d'exploitation* (the head of the household) in North Borgou; he takes care of material supplies for the household. The food grown on the communal fields belonging to the household, mainly cereals and a small amount of cassava, is generally not sold; it is used to feed the household. Often, and if possible, two-year stock is kept before selling (1,19).

Both men and women, in addition to their work on the communal fields belonging to the household, also grow crops independently on their own field and produce

vegetables as well as cotton or peanuts. They often sell almost their entire yield and spend the income obtained as they wish. For women, the processing of household products and small trade are also important and often lucrative activities.

In North Borgou, cotton was formerly grown for use by the household in mixed cultivation together with sorghum. Since 1965, the *Compagnie Francaise pour le Developpement des Textiles* (CFDT), a French agency for the development of cotton in West-Africa, has attempted to stimulate the production of cotton. Nevertheless, the production decreased in the seventies. In the eighties, the production of cotton as a monoculture, strongly supported by the government, developed substantially until 1987. Since then, there has been a stagnation causing a considerable fall in the income of producers.

Around 1970, animal traction, the use of animals for farming activities such as ploughing, was introduced in most villages in the region. In the past decade, application on a wider scale became useful and possible due to the expansion of the lucrative cotton production. The use of the plough, in addition to land being sufficiently available, resulted in a large expansion of the area of cultivated land, both for food crops and for cotton. In 1987, there was as yet no clear competition for land between these two types of farming produce (27). (Whether the reduction in income from cotton will also result in a reduction in the use of ox-drawn ploughs can not yet be predicted).

The fact that there is still sufficient land available, also seems evident from the fact that, according to the peasants, most requests for land, also those made by third parties, are granted by the *chef de terre*. The protected forest zones sometimes cause frustration for adjacent villages. During the pre-study, it became apparent, that nowadays fields can be found at distances of up to 10 kilometres from the village; for this often soil properties are often the reason. Strips of land that can be watered are used intensively; in these locations there is very little land freely available.

There is one growing season, lasting approximately four months. Particularly at the beginning of the season, a large amount of work has to be performed. Generally, work on the fields is carried out by members of the household. In addition, there are systems of mutual assistance, often in groups (*groupe de sarclage*). Especially the cotton-producing households are regularly faced with labour shortages and (foreign) wage workers are then hired for weeding activities and harvesting the cotton.

The area of land worked usually depends on the number of labourers available within the household and whether or not oxen are used for ploughing.

The production of cotton results in a further differentiation, the cotton-producing households possessing oxen forming the richest stratum and the households lacking both features forming the bottom layer (13). More affluent households

build up reserves which they then consolidate through the purchase of cattle or, nowadays, by depositing their savings in a bank account. (There will have been shifts within this stratification as a result of recent policy changes).

Farming in the semi-arid region to be studied is very sensitive to variations in climate. For example, the peasants fear for *ruptures de pluie*, that harm the germination process so that the fields have to be re-sown. In the literature consulted, the special methods of defence developed by households to secure their (long term) existence, within the physical context have been discussed at length (for example: 1, 11, 19, 30, 31, 34, 41). Irrigated market-gardening on the small strips along the Niger are also prone to the consequences of fluctuations in the availability of water; the growing season has been lengthened, but has not become infinite.

In times of great hardship, such as enduring dry periods, the richer peasants break into their savings and sell their cattle. Poorer peasants fall back on support by relations elsewhere and use wild plants for food.

### **Symbiotic Relationships?**

Over a century ago, the Fulani pastoralists moved into North Borgou in great numbers, in search of suitable grazing lands. The Dendi had then been living in the area for some time and in addition to fishing, which was their original means of existence, they had developed farming. The pastoralists have never dominated the peasants, as, for example, the Touareg, nomads living in the Sahara, have elsewhere. In fact, both the Fulani and Dendi were under the rule of the Bariba kings living further to the South, and later by the French.

Because Dendi hold older rights to the land, it is the Fulani that must request their permission to use it. This principle is still in force today. The two groups have remained on stable terms for a long time, as the relationships existing between them were based on mutual interest and advantage.

In North Borgou, a reciprocity existed between the contrasting ways of life, that was of great importance for the survival of the households in such unreliable semi-arid conditions. A symbiosis based on mutual dependence developed (see elsewhere: 9, 26, 33). This was accompanied by the exchange of goods and services and alternating use of land. The relationships varied per season and changed in times of drought. Co-existence was not always free from pressure, but was, in general, effect for both groups and based on mutual trust. Moreover, these relationships contributed to the conservation of the vulnerable physical environment.

In the dry season, the pastoralists let their herds graze on the stubble fields belonging to the peasant and, in exchange, left the manure on the fields. The peasants often gave the pastoralists a quantity of grain in return (manure contract). In the rainy season, the pastoralists retreated to non-cultivated grazing lands. Conflicts arose from time to time, for example when a herd came



too close to the sown fields. Furthermore, in relatively dry years, the pastoralists were forced to take their herds to watering places in the farming zone. The peasants who already feared poor harvests were burdened with the additional worry of a stream of herds from surrounding areas.

The conflicts that arose were solved on an individual level. If an agreement regarding compensation could not be reached, the conflict was put before the *chef du village* who determined the amount of damages to be paid.

The peasants in North Benin usually consolidated their capital savings in the form of cattle, which were then entrusted to the care of a Fulani herdsman. The herdsman was given milk in exchange and was allowed to keep a number of the calves (*gardiennage* contract). The Fulani acted as the Dendi's treasurers. The necessary trust was not always deep enough, especially in dry periods when the number of cattle deaths rose. The peasants sometimes broke their contracts, and preferred to keep the animals under their own care. It was not easy for Fulani who had recently moved to the region to conclude these contracts, as they often had a more difficult relationship with the Dendi-peasants (38).

The main market relationship between the two groups related to the trading of milk (products) in the rainy season and the trading of grain by the Dendi. In dry periods, the terms of exchange became disadvantageous for the pastoralists. [In this region, manure is not a market commodity, such as in some densely populated areas in Nigeria (21)].

In the past decade, this relationship of mutual dependence has come under increasing pressure as a result of a number of rapid changes. The ox-drawn plough has led to an enormous expansion of the fields, further limiting or precluding grazing possibilities. Moreover, watering possibilities have become more scarce, due to the irrigated gardens that are worked during most of the year. This affects the spatial interplay between the two groups. Meanwhile, the pastoralists' space requirements have not reduced and have even increased in dry years.

The complementary element is fading, causing the strength of the relationship between Fulani and Dendi to diminish. Nowadays, also peasants breed and raise cattle, for one reason to provide for trained oxen. The Fulani are losing their monopoly for this product. It is becoming common practice to take income earned from cotton to the bank, so that *gardiennage* contracts are becoming scarce. Additionally, the number of cattle deaths has risen during the dry period and fewer calves have been born. This is also the case with cattle entrusted to the care of Fulani-herdsmen. As a result, the mutual trust on which these contracts are based has been damaged. The Fulani, on the other hand, have increasingly taken up farming, one of the reasons being the years of scarce rainfall and the large number of cattle deaths (as indicated elsewhere: (26, 37, 7). The more affluent Fulani rent teams of oxen from the Dendi peasants. Due

to the larger quantity of manure, the yields per hectare are higher and -in good years- surpluses can be produced.

In general, coexistence is considered the normal situation. However, the relationship between peasants and pastoralists has become very grim under the pressure of the circumstances described above. Evidence for this is supplied by several incidents of violence, in which Fulani and Dendi have been killed (for example in Malanville in 1985 and 1989).

### **The Influence of External Factors: Market and Government**

Market fluctuations play a specific part in the development of the modes of existence of both Fulani and Dendi and their mutual relationships. In general, the trade in food crops is limited. There is insufficient infrastructure for the trade in grain other than local transactions and the immediate proximity of a market, essential for the sale of milk, does not exist (39). Both ways of life are especially intertwined where it comes to the trade in grain and milk. In the past 20 years, the profitable activity of indigo dyeing has gradually disappeared, as has fishing on the Niger in the past decade. The production of cotton for export purposes offered excellent prospects especially between 1980 and 1987. The international market in Malanville is a good outlet for the flourishing market-garden produce, but deficient transport facilities and products perishing on the way to the market are still major problems.

However, it is government policy that has put the most pressure on the Fulani and Dendi ways of life. Not only does the government influence the development of agricultural resources, but the government also channels important international economical processes to the local level.

Until 1960, the area of research came under the French colony of Dahomey. After independence, a period followed in which numerous changes of power took place. In 1972, the current president M. Kerekou came to power. He declared the *Republique Populaire du Benin* (1974) and pursued an anti-Western, marxist-leninist policy. At the end of the seventies, his policy became more moderate. This was expressed, for example, in the encouraging of small peasants to produce cotton for export.

For our subject matter, the Ministry of Agriculture is the most relevant department within the government. This Ministry has opened offices in each province which have the task of putting its national policy into practice. These regional offices are large, many-branched organizations with personnel in most villages. At the bottom of the ladder, we find the *Agent de Vulgarisation Agricole*. He deals with arable farming, follows the peasants in their everyday life and is responsible for the implementation of the national policy at local level. He also collects data, for purposes of policy development at provincial and national level. There are separate officials for carrying out the livestock policy, the *Chefs d'Elevage* (10), who are mainly concerned with fighting and preventing disease.

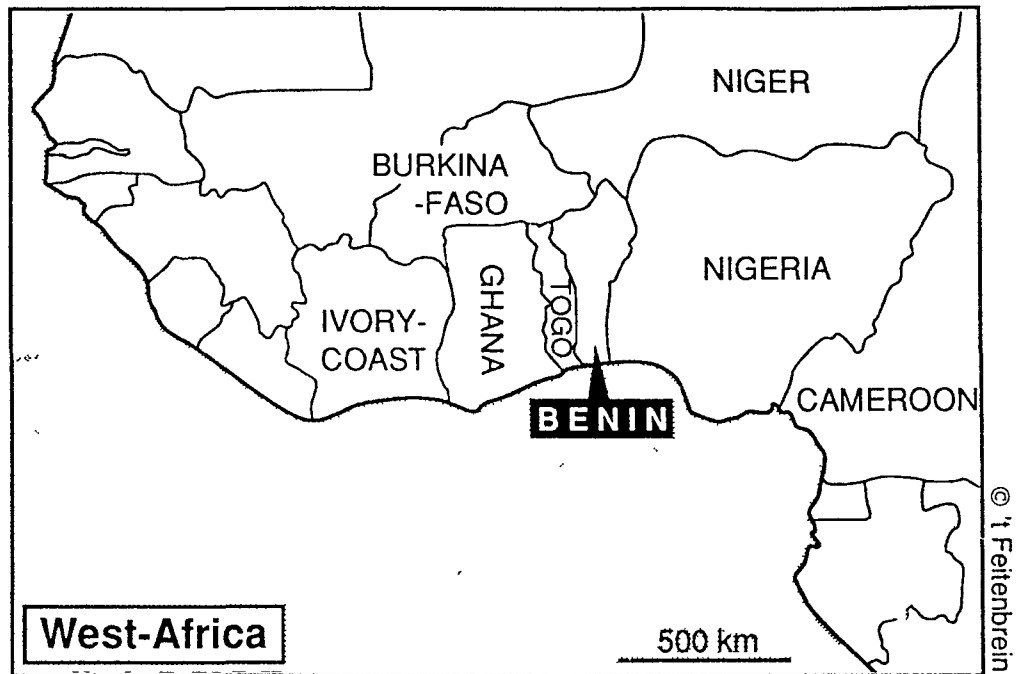


Fig. 2

These *Chefs* inspect the herds from time to time, that is if the herds have not migrated too far away.-

The regional office in the Borgou was established in 1975 (3). Like the French in the past, this office has, since 1981, mainly been encouraging the production of cotton, for which activity this province is especially suitable. Measures have included a credit scheme, for example for the purchase of oxen. This project received wide-scale support from the World Bank until 1987, when support was postponed for a certain length of time. The State holds the monopoly for trading in cotton and purchases the entire yield pre-fixed prices (2). Since April 1984, the world market prices have dropped by 50% and the export of cotton has been making a loss. For this reason, the government initiated an active discouragement policy in 1987. Policy measures included making the cost/benefit ratio disadvantages for the producer and not purchasing or paying for the cotton. Other measures directly resulted in reducing cotton production. These measures will eventually lead to cutting the income of the producers concerned by half. With regard to the production of cotton, it is valid to state that as from 1987, a new situation has arisen in which producers are faced with considerably more insecurity (29). The consequences of this development for the peasants and pastoralists of North Borgou are not evident as yet.

As an alternative, the government promised to buy up the entire peanut crop as from 1987. The largest part of the peanut yield finds its way onto the market as peanut oil and this situation does not seem to be changing. In the past, the government has from time to time attempted to intervene in the food sector by buying up sorghum harvests, but in addition to the hesitation of producers to sell instead of building up reserves, the price offered by the government was, in most cases, too low (25, 27, 32).

In comparison to the interventions in arable farming, government attention for pastoralists is limited and mainly concentrated on vaccination programmes. In the long run, the government aims at intensifying meat production and turning it into a sedentary activity in a number of zones where improved infrastructure will be offered. This aim is supported by the FAO among others (18). A second government department which the peasants and pastoralists of North Borgou have dealings with is the *Ministere des Eaux, Forets et Chasse* (water, forests and hunting). This Ministry has appointed wardens to guard the forests and national parks, however with varying effect. The intrusion by the Fulani and their herds eventually leads to forceful action, while elsewhere the authorities turn a blind eye to the peasants preparing their fields in the protected areas. It is also the duty of forest wardens to take action, especially in Karimama, against the burning of forest, in order to protect the environment.

In the administrative structure of the government, each district is headed by a district commissioner who is appointed at national level. At the lowest level, a mayor is elected locally in each municipality (3). The degree to which these officials influence the use of agricultural resources mainly depends on their cooperation with agricultural civil servants and the forest wardens. Additionally, there are the local authorities, the *ched de terre* and the *delegue*, elected by the men in each village and the *presidence* elected by the women. Government officials can approach local products only after having consulted these local authorities, in particular the *delegates*.

When analyzing the role of the government with regard to the mutual relationship between the Fulani and Dendi modes of existence, it is clear that the government is preoccupied with encouraging the production of export crops. The pastoralist mode of existence is jeopardized on fundamental points; in particular with regard to the restriction of their mobility. Literature shows that this restriction is a general tendency in agricultural policy ("The sedentary nature of the official mentality" (33), see also (12, 23, 37).

This 'bias' in government policy partly stems from the view held by authorities that the pastoralists are to blame for the Sahelization-process because of over-grazing.

### Conclusion

In the past decade, the relationship between pastoralists and peasants in the region of research has undergone changes which are exemplary for developments taking place anywhere in the contact zone between two such contrasting ways of life.

The shared use space is evolving to the disadvantage of the pastoralists and mutual dependence and assistance is decreasing. While the physical environment is increasingly showing signs of strain, the pressure on social relationships is rising, as is proved by the mounting tensions. Changing technology and government policy have played an important role in this process, against a background of population growth and relative drought. The former relationship between peasants and pastoralists can be described as a symbiosis in the strictest sense of the word, meaning a relationship based on mutual advantage. This does not imply that the relationship was without conflict, but that there were mechanisms with which conflicts could be controlled and which prevented conflicts resulting in enduring disruption of the relationship between the two ways of life. Recent developments in the Fulani and Dendi ways of life have caused the complementary aspect of their relationship to fade. The relationship nowadays is of less importance to both groups and the mutual advantage risk being pushed to the background. The former symbiosis between the modes of existence of the Fulani and Dendi on the basis of co-ordination is heading for polarization.

### Bibliography

1. Apeldoorn G.J. van (1981). *Perspectives on drought and famine in Nigeria*. London: Allen & Unwin Publishers Ltd.
2. Baar, K. van (1986). *La production et la commercialisation du coton en Republique Populaire du Benin*. Amsterdam: University of Amsterdam.
3. Bamidele Ayo S (1984), 'Ideology, Local Administration and Problems of Rural Development in the Republic of Benin'. *Public Administration and Development* 4(4).
4. Benoit M (1979). *Le chemin des Peul du Boobola. Contribution a l'ecologie du pastoralisme en Afrique des savanes*. Paris: ORSTOM.
5. Bierschenk T & R. Forster (1988). 'Die Produktionsrationalitat der Agroo-pastoralen Fulbe in Nordbenin'. *Giessener Bietrage zur Entwicklungsforschung* 1(17)
6. Bogaard H. van den (1984). *Le processus de transformation chez les Peulhs et les agriculteurs dans le nord-Borgou*. Wageningen: University of Wageningen.
7. Boogerd L. van den & Perthel D & Haan L. de (1990). *Les strategies des Peulhs dans le Sud-East du District de Segbana, Benin, Republique du Benin*. Amsterdam/Cotonou: Programme de Cooperation Universitaire au Developpement NUFFIC/PAO.

8. Breman H (1982). 'Ontwikkelingen en mogelijkheden in de veeteelt'. *De Sahel. Landendokumentatie*. Amsterdam: Royal Institute of the Tropics.
9. Diarra M.S (1975). 'Les problemes de contact entre les pasteurs Peul et les agriculteurs dans le Niger central'. *T. Monod, Pastoralism in tropical Africa-London: Oxford University Press*.
10. Dieckmann N (1981). *Le CARDER-Borgou. Une etude sur la structure d'organisation du Centre d'Action Regionale pour le Developpement Rural dans la province Borgou en Republique Populaire du Benin*. Wageningen: University of Wageningen.
11. Dietz T (1987). 'Geografisch determinisme in vermomming? Over agrarische landevaluatie, bevolkingsdraagvlak en geïntegreerde rurale ontwikkelingsgeografie'. *H. van der Wusten (ed), Postmoderne aardrijkskunde. De sociografische traditie voortgezet*. Muiderberg: Coutinho.
12. – (1987). *Pastoralists in dire straits*. Amsterdam: Netherlands Geographical Studies, University of Amsterdam.
13. D.S.E.I. / Carder (1987). *Estiation des revenus moyens des exploitations pour les principales cultures*. Parakou: (Government Report).
14. – (1987). *Estimation des superficies physiques des cultures annuelles*. Parakou: (Government Report).
15. – (1987). *Resultats de l'enquete sommaire sur les reactions des paysans de la province de Borgou face a la crise cotonniere*. Parakou: (Government Report).
16. Dupire M (1970). 'Organisation social des Peul'. *Recherches en sciences humanies* 32. Paris: PLON.
17. – (1977). 'Exploitation du sol, communautés résidentielles et organisation lignagère des pasteurs woDaaBe (Niger)'. *T. Monod, Pastoralism in tropical Africa*. London: Oxford University Press.
18. FAO (1986). *Project PNUD-FAO BEN/84/011. Developpement pastoral integre dans le Borgou. Fiche technique*. Cotonou: FAO/UNDP.
19. Faulkingham R.H (1977). 'Ecological constraints and subsistence strategies. The impact of drought in a Hausa village: a case study from Niger'. *D. Dalby, R.J. Harrison Church, F. Bezzaz, Drought in Africa II*. London: International African Institute.
20. Foreken D & A.C. Kruithof (1985). 'Overheidsbeleid en implementatie op lokaal niveau'. ISG/SALPA. Amsterdam: University of Amsterdam.
21. Hill P (1982). *Dry gain farming families. Hausaland (Nigeria) and Karnataka (India) compared*. Cambridge: Cambridge University Press.
22. Horowitz M.M (1975). 'Herdsman and Husbandman in Niger. Values and Strategies'. *T. Monod, Pastoralism in Tropical Africa*. London: Oxford University Press.

23. – (1986). 'Ideology, policy and praxis in pastoral livestock development'. *M.M. Horowitz & T.M. Painter (eds), Anthropology and rural development in West Africa*. Boulder: Westview Press.
24. Kessler J.J. & F.M. Ohler (1983). *Interventies in Sahellanden: een ecologische benadering. Effectiviteit van en milieubeïnvloeding door interventies in de Sahel- en Soedan-zones van West-Afrika*. Wageningen: University of Wageningen.
25. Klaase Bos A & Neefjes R.P (1987). 'Staatsinterventies of vrijhandel in de Afrikaanse landbouw. Katoen en mais in de voksrepubliek Benin'. *Geografisch Tijdschrift* 23 (5), pp. 404-420.
26. Krings T.F (1980). *Kulturgeographischer Wandel in der Kontaktzone von Nomaden und Bauern in Sahel von Obervolta. Am Beispiel des Ouadalan (Nordost Obervolta)*. Hamburg: University of Hamburg.
27. Kruithof A.C (1987). *Rapport sur la mission de reconnaissance au nord Borgou aoutoctobre 1987. Fait per ordre de l'Universite Nationale du Benin et le CARDER-Borgou*. Amsterdam: University of Amsterdam.
28. Kruithof A.C (1988). *Rapport sur la mission de recherche dans la vallee du Niger maijuin 1988. Fait par ordre de l'Universite Nationale du Benin et le CARDER-Borgou*. Amsterdam: University of Amsterdam.
29. Kruithof A.C (1989). 'De effectiviteit van staatsinterventies in de export-landbouw. Ups and downs in de Beninese katoensector'. *Geografisch Tijdschrift* 23, 5, (pp. 323-331).
30. Kruithof A.C, A .J. Dietz, L.J. de Haan & H.A. Reitsma (1990). *Coping with Aridity*. Amsterdam: Netherlands Geographical Studies, University of Amsterdam.
31. Longhurst R (1986). Editorial, *IDS-Bulletin*, (Seasonality and Poverty) 1.
32. MDRAC (1986). *Etude de la commercialisation des produits vivriers au Benin. Volume 2. Rapport definitive*. Cotonou: Government Report.
33. Monod T (1975). Introduction. *T. Monod, Pastoralism in Tropical Africa*. London: Oxford University Press.
34. Pascon P (1987). 'Technische bedrijfsvoering en economische beslissingen van kleine Marokkaanse boeren met grote produktierisico's'. *Geografisch Tijdschrift* 21, (1).
35. Pascon P & Wusten H. van der (1983). *Les Beni Bou Frah. Essai d'ecologie sociale d'une vallee rifaine*. Rabat: Reproductions Industrielles.
36. Ohouko J.A (1986). *Possibilites et contraintes d'evolution de l'economique pastorale Peul. Etude de cas de quelques campements et villages dans la region de Banikoara, Borgou nord, RPB*. Abomey: University of Benin.
37. Piche V & J. Gregory (1977). 'Pour une mise en contexte de la famine. Le cas du Lipatoko-Gourma'. *D. Dalby e.a., Drought in Africa II*. London: International African Institute.

38. Rochette R & M. Bogas (1981). *Etude socio economique de la vallee du fleuve Niger. District de Malanville et de Karimama*. Cotonou: FAO.
39. Salifou A.A (1983). *Economic Appraisal of Sorghum Production and Marketing. A Case Study of Four Districts in Borgou Province (RPB)*. Ibadan: University of Ibadan/University of Benin.
40. Swift J.J (1977). 'Sahelian Pastoralists, Underdevelopment, Desertification and famine'. *Annual Review of Anthropology* 6.
41. Watts M (1983). 'Hazards and Crises. A Political Economy of Drought and Famine in Northern Nigeria'. *Antipode* 15 (1).
42. – (1983). "Good Try, Mr.Paul': populism and the politics of land use'. *African Studies Review* 26 (2).