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5 Pastoralists, Chiefs and Bureaucrats: A Grazing Scheme in Dryland Central Mali

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INTRODUCTION

A project aimed at local environmental management may be regarded as a temporary organization with a specific aim. Over the past few decades many such temporary organizations have been set up to promote pastoral development and to combat desertification. The main assumption behind many pastoral development projects has been the need to change traditional range management practices, as the problem in the pastoral sector was considered to be one of inappropriate land use, and the way to cope with it was to increase control over the numbers and movement of livestock (Hogg, 1988: 183). Regulation of grazing pressure by setting aside grazing areas for bad times and rational management of rangelands are seen as an important means to improve the performance of the African livestock sector, while at the same time preserving the ecological equilibrium by regulating grazing pressure according to ecological indicators. However, this type of pastoral development has produced an unprecedented record of failures. According to Horowitz these failures may be attributed to the fact that 'fundamental errors about the nature of pastoral production systems are maintained by planners and these errors lead inevitably to flawed projects' (Horowitz, 1986: 255).

In organizational theory it has been argued that control, regulation or coping with uncertainty within and in the environment of an organization is the most fundamental problem of an organization (Thompson, 1967: 159; Mintzberg, 1979: 21). Organizations have to adapt to uncertainty, for otherwise they will be unable to perform their tasks effectively. Decision-making and the capacity to control uncertainty are closely related to the structure of power within an organization and to who controls and benefits from the organization (Pfeffer, 1978: 4). People who are able to control

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uncertainty acquire power because they help the organization survive and help promote efficient execution of the assigned tasks.

Surprisingly, development projects have rarely been studied from this perspective, that is, as a normal organization, be it temporary, in which donors, project staff, and the local leadership and population participate. While the responses of pastoralists to development initiatives and the dynamics of pastoral production systems and responses to drought have been studied extensively (see, for example, N. and R. Dyson-Hudson, 1980; Galaty et al., 1980; Horowitz and Jowkar, 1992), surprisingly little attention has been given to the role of change agents like livestock services and pastoral elites in pastoral development.

An important issue that should be raised in relation to the organizational setting of pastoral development projects is that of land tenure. Changing traditional range management practices and the regulation of grazing pressure imply that control over land is taken out of the hands of the pastoralists and transferred to the organization responsible for the new form of pasture management. Pastoralists may be part of these organizations, as participants, but, as will be shown in this chapter, this transfer leads to changing relations in the power over pasture land. Of fundamental importance in this transfer of power are the different conceptions of tenure of the interest groups involved and the degree of power they have to ensure that their version of tenure is put into practice.

We will try to show the relevance of these organizational issues for the understanding of failed pastoral development projects. We will do this by discussing a range management scheme in Central Mali, which was organized in a dryland area in the Niger Bend by the *Opération de Développement de l'Élevage dans la région de Mopti* (ODEM). This large livestock development programme was implemented after the Sahelian drought of the 1970s[1].

First we will discuss the ecological and institutional setting of the project, then the characteristics of all the participants in the project: pastoralists, the chief, ODEM and the foreign experts. With this information in mind we will discuss the history of the grazing scheme and the reasons for its collapse. In the discussion we will try to determine what can be learnt from this experience with respect to the future of pastoral development.

ORGANIZATION OF THE GRAZING SCHEME

The ecological setting

The range management scheme, called Bunndu Naange (the well of the sun), organized in a block of pastures with the code name P-17 (ODEM, 1984), is located in the middle belt of the Seeno-Manngo. The Seeno-Manngo is a vast area of fixed sand dunes providing good pasture in the cercles[2] of Douentza and Koro, Central Mali. North and south of the Seeno-Manngo there are a

number of settlements of Fulbe[3] pastoralists and villages of Humbebe cultivators. Use of the pastures by local pastoralists has always been difficult, because of the absence of water resources in the area in the dry season (October–June). In the rainy season (400 mm per annum: July–September), there are a number of small ponds, which attract pastoralists to exploit the abundant pastures with their herds. In the past limited exploitation was possible just after the rainy season, when herds were grazed on the fresh regrowth of burned perennial grasses. Due to the shortage of rainfall since 1968, these grasses have disappeared: only annual grasses remain. Trees are sparse (predominantly *Combretum glutinosum* and *Acacia raddiana*) except in some small depressions, where other species (*Adansonia digitata*, *Sclerocarya birrea*) are also to be found.

In the dry season only strips 8–20 kilometres wide at the northern and southern edges could be exploited, provided village wells were present. In 1958 a French organization drilled a number of boreholes in the area and installed windmills to pump up deep-level groundwater. One of these windmills (*Bunndu Hindu*: well of the wind) was located in the middle of the Seeno-Manngo south of a village called Serma, at a site called Edal[4]. This was the only area that was exploited regularly in the middle belt, until the windmill broke down for lack of maintenance.

The institutional setting

In the colonial period all land that was not used for more than five years was nationalized in the colonies of French West Africa. Used land, that is land under some form of local or traditional tenure, enabling agricultural use, remained under traditional regulations. This law is based on a European concept of land use. Land is either used or not used for a specific purpose. Land-use schemes such as intermittent use under a bush-fallow system, overlapping use rights, like the right to pasture livestock on agricultural residues in the post-harvest season, or gathering and herding activities combined in the same area, or pastoral conceptions of territoriality or tenure of pastures do not fit into the conceptual framework of this law. A person or a community either owns or does not own a specific tract of land, and use entails physical disturbance of the soil. Extraction of products is not considered to entail use. For example, fodder is not even mentioned as a forest product in the Malian forestry code.

These provisions in the colonial, and later Malian, land law have long remained a dead letter for researchers. There was nothing to exploit for the colonial government, so no efforts were made to appropriate the bush. Only when conflicts arose among the population did administrators intervene in land-tenure affairs, and then only hesitantly, for they preferred to leave these matters with the Fulbe chiefs, fearing riots if they made the wrong decision. This remained so after the independence of Mali in 1960.

The situation began to change with the drought of the 1970s. International attention was drawn towards the droughts in the Sahel and massive amounts of aid money poured into the region, aimed to help improve the productivity of traditional land-use systems and restore the ecological balance. For Sahelian governments it meant that funds could be obtained to develop backward sectors of the economy, like the forestry, fisheries and livestock sectors. This money also enabled these governments to build up an infrastructure to control the use of natural resources. Kliest et al. (1982) give an overview of all kinds of parastatals that were revitalized in the Mopti region of Mali after the drought. The agricultural service (*Opération Mil Mopti*), fisheries service (*Opération Pêche*) and rice development agency (*Opération Riz Mopti*) all received credits from the World Bank to build up a new infrastructure and start projects to promote food production. The forest service started a social forestry project in cooperation with USAID[5] (UNSO, 1983). Land boundaries resulting from a concrete appropriative move on the part of the government, embodied by the law (cf. Ingold, 1986: 156), were instrumental in channelling the donor funds towards government departments and parastatals (e.g. the livestock, agricultural and forestry services) and not to other kinds of organizations. If the state had not been the owner of the land, it would not have been possible to obtain funds for improving management of this land.

This appropriation of the bush was eventually in the interest of educated urban people, who gained employment in these government departments and parastatals. It also enabled them to appropriate the products of these lands as they were appointed managers of these lands (Gallais, 1984). For example, it turned out that rice lands in the neighbourhood of Mopti (Opération Riz Mopti) are exploited by tenants and family members of ORM employees (Gallais, 1984: 229)[6].

After the drought of the 1970s it was also felt that something had to be done in the livestock sector in Mali. Although the nomads in the Gao and Tombouctou regions were the hardest hit, it was decided that the Mopti region to which the Seeno-Manngo belongs would be the nucleus of pastoral development. To this end, an ambitious programme was launched and the livestock service of the Mopti region was transformed into the *Opération de Développement de l'Élevage dans la région de Mopti* (ODEM). Of the funds, 77% were obtained from the World Bank (IDA: International Development Assistance) as a loan, with 23% from national sources. In 1986 the sources of funding changed. The World Bank (IDA) provided 43%, CCCE (*Caisse central de Coopération Économique de la République Française*) 31%, and FAD (Fonds Africain de Développement) 3%. The rest came from national sources (22%) and revenues from the clientele, the pastoralists (1%, or about 20 million Franc CFA per annum).

The aims of the programme were ambitious (Source: ODEM, 1984; 1985): restoration and preservation of the ecological equilibrium, promotion of the production and productivity of livestock, improvement of the socio-economic conditions of the population, and promotion of the marketing and export of cattle to relieve pressure on grazing land and to earn foreign exchange.

This was to be achieved by:

- a classical zootechnical component consisting of inoculation campaigns and experiments to improve pasture management;
- organization of livestock markets and establishment of a slaughterhouse;
- adult literacy project and improvement of health care;
- improvement of water availability for livestock in marginal areas, to relieve pressure on the Inner Delta of the Niger by digging 70 wells and 50 water ponds;
- better control over the livestock sector by means of education, extension campaigns, regulations and technical facilities, to be channeled through pastoral associations with the aim of reducing pressure on pastures.

Although the ODEM is not an environmental project *sensu stricto* it is clear that the envisaged measures and results of the programme are extremely relevant to environmental management both in the short and the long term. The results of the first phase of the ODEM (1975–1981) were quite disappointing, however, from both a technical and a social perspective (see Gallais, 1984). A second phase was started in 1986 after a transitional phase from 1981 to 1986. According to Gallais (1984: 233–237) the most important problems during the first phase were: the high degree of centralization; weak technical capacity, in both water resource development and vaccination campaigns; corruption; and lack of trust among the population.

THE ORGANIZATION OF THE PROJECT

The Seeno-Manngo was one of those marginal areas in which water availability was to be improved. The choice of this area was not justified from a pastoral point of view, because the area did not play an important role in the pastoral sector of Central Mali. More important was the fact that the director of ODEM was a Kumbeejo, originating from the Seeno-Manngo, who wanted to do something for his clansmen (Gallais, pers. comm.). ODEM started with a well-digging programme in 1975. A number of wells were dug, with far less than the planned output, because the hydro-geological situation proved to be far more difficult than had been envisaged, as any herdsman could have told, so that the wells were very costly[7]. Luckily so, because the main effect of the wells was a massive wave of immigrating cultivators and pastoralists, because nothing had been arranged concerning the ownership and management of the wells.

A total of 11 wells were dug. In 1984 it was estimated that at each well between 2500 and 5000 animals were watered. They belonged to Dogon and

Fulbe from the area, but also to Foulankriabe, Twareg from Rharous, Gossi, Inadiatafane, Hombori and Bambara-Maounde, Arabs and Fulbe from Burkina Faso (ODEM, 1984:53). The report of ODEM concludes dryly: 'La zone de Seno est devenue une véritable centre de convergence des populations pastorales d'horizon très divers.' (ibid). Only in 1991 did ODEM launch a campaign to install management committees at each well, when the wells were repaired. But then the damage had already been done. The pastoralists, who were initially reluctant, also joined these committees, because they realized they would lose all power over the wells if the committees were composed of agriculturalists only.

The project was part of a much more ambitious scheme to develop the middle belt of the Seeno-Manngo, as a follow-up to the (unsuccessful) well-digging programme. It was planned to divide the whole Seeno-Manngo into blocks of pastures with their own boreholes to provide water and their own management committees, as part of a pastoral association based in the subdistrict capital Boni. The pastoral association was headed by the Fulbe chief of Boni, who became president. The vice-president was the next in line to become chief. The block near Serma, a Fulbe settlement at the northern edge of the Seeno-Manngo, with the code name P-17, an area of 12 000 ha, was to be the pilot project. The borehole was equipped with a solar pump and therefore called Bunndu Naange (the well of the sun) by the local herdsmen. Grazing was regulated. Only a certain number of animals were allowed to graze, somewhere around the equivalent of 3000 head of cattle, for part of the year. In the beginning the scheme was opened for six months (January–June). Later on the opening period was cut back to three months (April–June). The rest of the year the borehole was closed and even in the rainy season no grazing was allowed, to prevent overgrazing[8].

A local committee was formed in Serma consisting of Fulbe pastoralists, headed by a local herdsman of the most prominent lineage in Serma. This committee was responsible for the daily supervision of the project, so that no one grazed his animals in the area outside the months specified. Another task of the committee was the laying out of fire-breaks to prevent bush-fires from entering the scheme in the post-harvest season. A local well-digger was appointed guard of the equipment, after he had received instructions from the foreign expert. His task was to maintain the equipment and to see to its proper use. He was provided with a modest salary, to be paid by the users of the scheme. The users paid 25 FM per month per head of cattle to cover this expense. Cultivation in the area was strictly forbidden. Illegal grazing was subject to heavy fines[9]. The director of the ODEM in Douentza, who originated from Lenga, a neighbouring village of Serma, was responsible for the selection of the users of the scheme. Information from local informants and the livestock service indicates that only herdsmen from surrounding villages were admitted.

The only problem at the start of the project was that the solar pump did not function according to the supplier's specifications, so that less water was available than needed. A conflict arose between the supplying company and the ODEM, because the ODEM refused to pay for the pump as long as it was not functioning properly. The company, on its part, refused to repair the pump as long as payment was not forthcoming (Meyersoun, pers. comm.[10]). This problem was solved by allowing fewer cattle on the scheme than was originally envisaged, as a means of limiting water requirements.

THE PARTICIPANTS IN THE PROJECT

The pastoralists of the Seeno-Manngo

The Fulbe, the dominant ethnic group in the region, are an agro-pastoral people. Their main occupation is livestock-keeping, predominantly cattle, but every year they cultivate millet on fields at their campsites (*biile*), around the villages of Riimaybe (their former slaves) or around wells. The fields are manured by their livestock. Since the start of the droughts the productivity of millet cultivation has been steadily declining, owing to the combined impact of less rainfall and decreasing numbers of livestock.

In Serma, where the data for this chapter were gathered, two types of appropriation of land may be distinguished, which we will label, following Ingold (1986), 'territoriality' and 'tenure'. Tenure, defined as 'nature engaged in a system of social relations' (Ingold, 1986: 136), refers to the ownership of fields, on which millet is cultivated, now or in the past, and dry-season water resources. Fields are owned individually. Water resources are either collectively owned, in the case of wells, or individually owned, in the case of cisterns, where water is stored for the dry season. Ownership of fields and water resources is in general obtained by means of inheritance, though fields and cisterns may be bought or rented. However, most transactions take place within the confines of the village or with relatives of villagers from neighbouring villages.

Pastures are not owned by the villagers, though ownership of a piece of land may be obtained by settlement of a rainy-season camp (*wiinde*: pl. *biile*), which is subsequently cultivated. Access to pastures is restricted by control over dry-season water resources. If an outside herdsman wants to water his livestock, he has to ask permission to use the wells and in the case of cisterns water even has to be bought. When a herdsman is allowed to stay, services have to be rendered, for example in the form of manuring the fields of the owner of the cistern he uses or a field near the well. In the rainy season, access to pastures cannot be controlled, as there are plenty of ponds which do not fall under any tenure regime. Unless the livestock involved suffers from diseases, no herdsman can be denied access to the pastures around the village in that period of the year.

This type of appropriation of pasture we label 'territoriality'. 'Territoriality engages society in a system of natural relations' (Ingold, 1986: 136). It is qualitatively different from tenure, and it denotes 'a process that continually goes on', social relations having a permanent character, while territoriality refers to a 'succession of synchronic states' (ibid.). Nature, that is, the environmental conditions, determines the scope for resource use, rather than society determining the use of pastures. In the case of fields, which are held in tenure, it is the reverse, because people invest labour or manure in these and try to control natural processes by consciously changing the vegetational cover. This conception of rights of access to rangeland allows for the flexible use of pastures. Given the uneven distribution of rainfall over the years and within the region, a shortage of pasture in one region can be alleviated by driving the animals into another village's territory if sufficient pasture can be found there. When it is more convenient, access to the wells or the cisterns of the other village may even be requested.

With this in mind, it is understandable that the inhabitants of Serma have always resisted the digging of a well near the village, as was planned in the initial well-digging programme. As we have seen above, the tenure situation around these government-dug wells and boreholes on the northern and southern border of the Seeno-Manngo is unclear. As anyone may use these water sources, herdsmen with livestock and cultivators in search of well-manured land from all over the region settle near these wells within a village's territory. Eventually this leads to overgrazing and disownment of the original users of the area. Besides, Serma does not need a 'modern well', because the inhabitants of Serma dug their own well in the 1950s, 4 kilometres from the village, and this well has sufficient capacity for the whole dry season.

In the end, two attempts by an ODEM team to drill a borehole in Serma itself failed, because the chuck melted in an impenetrable layer. The villagers were unable to prevent the deepening of a pond near the village in 1987, designed to allow surface water to last two more months. This enables outside herdsmen from the Inner Delta of the Niger, in search of good rainy-season pastures for use during the period they are not allowed to graze in the Delta, to remain in the area until the Delta is opened again around December. They started to frequent the Seeno-Manngo after the drought of 1984–85 and are a nuisance, because they do not control their livestock properly, leaving the animals to wander in the millet fields of the autochthonous population. As this deepened pond is the only one which lasts after the month of October, conflicts are bound to occur. In 1991, for example, there was an outbreak of contagious peripneumonia in a foreign herd near a neighbouring village called Petegudu. Normally the herds from that village and the foreign herd would be denied access to the wells and ponds, and thus to the pastures of Serma. The herdsman from the foreign herd refused to leave the area and was beaten by the inhabitants of Serma. The herdsmen of the neighbouring village drove their cattle, among which

there were sick animals, into the deepened pond, demanding access to the water on the grounds that the pond was dug by the government and was nobody's property. Riots flared up and the livestock service and the *gendarmerie* had to intervene to settle the affair. In the end another pond 12 kilometres from Serma was assigned to the herdsmen of Petegudu.

As these incidents make clear, the tenure of water resources is closely related to the capacity of those involved to control access to their territory[11]. Consequently the borehole of the grazing scheme Bunndu Naange met with much less resistance, because the inhabitants of Serma had no fields there and were only using the area in the rainy season and for a couple of months thereafter.

The chief and political organization of the Fulbe

The Fulbe are organized in patrilineages, tracing descent from common ancestors. Alongside this organization on the basis of kinship, they are also organized territorially in chiefdoms headed by a member of a separate lineage, the Weheebe, though Fulbe. These chiefdoms probably already existed in the 17th and 18th centuries, but only in the 19th century did they emerge as distinct political entities with a sedentarized court, under the influence or protection of Maasina, the Islamic state in the Inner Delta of the Niger. Formally the chief was the owner of all the land in his realm. In practice, however, everyday decisions concerning the distribution of land and pasture were left largely to his dependants, who were free to move and cultivate within his territory. The chief depended on the pastoralists to provide soldiers to keep away the Twareg from the north and the Mossi from the south. The agricultural basis of Fulbe society was the labour provided by slaves (Riimaybe), who were part of the households of Weheebe and pastoralists or lived in sedentary villages.

The chief of the Fulbe of the Seeno-Manngo resides in Boni, where the office of the ODEM is also located. His authority is based largely on the fact that he is a descendant of Maamudu Nduuldi, a famous warlord from the 19th century, who fought numerous wars against invading Twareg (cf. Bâ and Daget, 1984 (1962): 160, 260). He was the founder of the chiefdom of Boni around 1870. The Fulbe in this region regard him as the chief who brought prosperity to the region, because he gave the Fulbe many heads of cattle, which he brought home as bounty from his raids.

When the chiefdom was founded, a political hierarchy was established in the region that was later reinforced by the French colonial government. The chief was at the apex, the Fulbe were his vassals, and slaves were at the bottom. Under French colonial rule these chiefs were the intermediaries between the population and the administration, so that their power was even increased (cf. Boutrais, 1990). In this way the chiefs gained powerful positions, as they became the sole and only brokers for the pastoralists *vis-à-*

vis the administration. Misuse of their position was not corrected by the colonial administration, because it did not dispose of the means and manpower to do so, even provided they had understood anything at all about the situation. The population was reduced to an amorphous mass of pastoralists and peasants. Although slavery has been abolished and the governance of the chiefdom has been taken over by the Malian administration, the influence of the chief of Boni is still far-reaching. Not only does he act as an intermediary for the Fulbe in all kinds of administrative matters, but the Fulbe also wait for his guidance in development projects. Without his intervention they will be reluctant to participate in development. In principle he is also the highest authority in matters of customary tenure of land and pastures. As we have seen, though, customary tenure over pasture is not recognized by the Malian government

ODEM staff

Daily management of the range management scheme was the responsibility of the ODEM staff of the ODEM branch office in Boni. In practice, however, most of the decisions were taken in Sévaré at the head office, 300 kilometres from the borehole. If the equipment at the borehole failed, for example, a mechanic had to come from the head office to do the repairs. In this way precious time was lost and the cattle could not be watered at the borehole. The same applied to decisions concerning the number of cattle and the dates for opening and closing the scheme. They were all taken at the head office. The position of ODEM staff at the local level is thus difficult. On the one hand they are supposed to implement participatory projects, while on the other they are closely tied to the directives from above.

In principle most of the ODEM staff come from the region they are working in. However, only a few of the staff are of truly pastoral origin. A considerable number of staff are recruited from among ethnic groups with a pastoral vocation. However, most of these are of urban origin, coming from families that settled in town several generations ago. Schooling among pastoralists is very low (well below 1% in the research area), so that they are not represented at staff level in government services, development projects or NGOs.

Donors/foreign experts

Because our fieldwork was done at the village level, we know very little about the donors and foreign experts associated with the scheme. All we were witness to was a group interview by a consultants' mission (all men) to the scheme with the inhabitants (all men) of Serma, and from time to time a four-wheel-drive vehicle used to pass our hut at high speed. Apart from this group interview the herdsmen were never consulted by these experts on matters

concerning the scheme. We do know, however, that many experts must have visited the scheme, because it is regularly referred to in literature (Gallais, 1984; Sylla, 1989) and has been the subject of a number of seminars at the Ministry of Livestock and Natural Resources.

BUNNDU NAANGE: THE WELL OF THE SUN

Although the solar pump did not function properly, the design of the scheme looked good on paper. Provisions were made to prevent the uncontrolled settlement of agriculturalists at the site[12]. The protection of the pastures through the establishment of fire-breaks was assured. Rules with respect to the number of cattle allowed on the scheme and the timing of grazing were established. Participation of the population was well organized. The pastoralists were represented in the local committee and they supplied labour to the scheme by establishing the fire-breaks. They contributed to the operating costs through payment of entrance fees. It was hoped that they would develop a feeling that the project was theirs, which was literally true, because they were using the area as their pastures and by investing labour in the fire-breaks they were obtaining rights to the pasture land according to local custom.

Initially the project was a big success. The scheme provided good grazing and water at a time of the year when most cattle lost weight and water was scarce. According to someone involved in the first stages of the project, it went like this:

> I was asked to monitor the performance of the calves of two years old at the beginning and the end of the campaign. After two years there were no animals in the Seeno-Manngo except those of Bunndu Naange. The number of twin calves rose considerably. The director of ODEM asked me to keep the animals at the borehole, so that he could see with his own eyes that one cow provided sufficient milk for two calves.

Soon difficulties began to arise, however. A conflict emerged between the local personnel and the president of the association, because the chief refused to pay the guard, because, according to rumour, 'he was seducing the women of the herders[13]. The conflict was decided in the guard's favour, after an intervention of the *gendarmerie*, but soon after he took his leave. He was replaced by a son of the chief of Boni, who knew nothing about the maintenance of the solar pump, so that soon the pump was wrecked.

The next year the scheme was closed, as no water could be pumped up. In 1983 the pastoral association was provided with a generator, an electric pump, a basin of 24 m^3 and two drinking reservoirs by ODEM (ODEM, 1984: 55). The local committee was replaced by a new one, for it was felt that some lineages were not adequately represented. The leadership remained the same, and the other members were recruited in Serma. As a result of all

these changes the operating costs rose considerably: according to the ODEM staff from 25 FM to 300 FM per head of cattle per month to pay for fuel and fuel transport, the maintenance of the motor pump and a contribution of FM 500 000 by the pastoral association to the capital investments. The total revenue from the scheme was thus FM 2 700 000 at a stocking rate of 3000 head of cattle and an opening period of three months. The herdsmen insist, however, that they pay double this amount[14]. At the time this did not constitute a real problem for the herdsmen, for they had sufficient livestock to cover these expenses, and they had considerable extra revenue in the form of milk, animal health and higher prices for animals sold at the market.

After this reorganization things did not function properly. A member of the local committee, who is widely known as an honest man, told us that all financial management was done by the president of the pastoral association in Boni (the chief) and his son, who acts as borehole guard. The chief took responsibility for the provision of fuel, the maintenance of the motor pump and the contacts with the ODEM offices in Douentza and Sevaré. To perform all these tasks he bought a car on behalf of the pastoral association, initially a second-hand Peugeot, later on a big Landrover[15]. He thus firmly established his control over everything relating to the grazing scheme.

Access to the scheme was for the happy few: those who could afford to pay the watering fees. In the dry season of 1984, 18 herds consisting of 2550 head of cattle and 400 small ruminants were admitted to the scheme. In 1991 in Serma alone there were 60 pastoral families registered, each potentially disposing over a herd. In 1983, before the drought, there were even more families[16]. We were told several times in private that Fulbe herdsmen taking care of cattle owned by the chief were given preferential access to the scheme. People belonging to the entourage of the chief never paid the fees for entering the scheme.

In 1987 and 1990 the chief organized a village woodlot in Serma and at Bundu Naange. The trees that were planted (*Prosopis juliflora* and *Azadirachta indica*) have no local use—no one would dare to touch them anyway. The population of Serma was ordered to water the plantation. For this they would be given food aid provided by the World Food Programme. The people were only meagerly rewarded. According to an inhabitant of Serma, only two bags of corn meal, two tins of sardines and a tin of cooking oil arrived, while there should have been a truck load. The plantation at Bunndu Naange failed completely, because the borehole was closed at the time of planting and the youths who were supposed to water the trees had to walk 13 kilometres from the village to the borehole.

In 1983 a drought set in. In the first year pastures were not too bad according to the local herdsmen. According to ODEM:

> . . . la mauvaise repartition des pluies durant l'hivernage n'a permis une production fourragère satisfaisante que dans le Mema et dans le Seno-Mango, zone de transhumance d'hivernage. Dès le mois d'Avril on a pu constater une forte concentration de troupeaux autour des forages implantés dans ces deux zones favorisant ainsi un surpâturage rapide et critique. (ODEM, 1984: 8)

And this was only 1983. In 1984 the rains failed completely and pastures were bad all over the Sahel and Sahara. Herds from the Gourma, Gao and Tombouctou region poured into the Seeno-Manngo. They occupied the government-dug wells in the Seeno-Manngo. Under pressure by the government, and seduced by bribes, the chief of Boni allowed free access to the borehole to anyone who needed water for his livestock[17]. The inhabitants of Serma asked him three times not to do this, but he said that as these people were all Malians and the land was state-owned he could not and would not deny them access, in which stand he was right according to the law. The disaster that was taking place all over the region consequently repeated itself at Bunndu Naange. Pasture and water were in short supply and a large majority of the animals died. People who wanted to escape the disaster lost lots of cattle while travelling. The animals were too weak to endure the journey, because the herdsmen had stayed too long at the borehole, thinking it was protected pasture.

In that year the inhabitants of Serma lost about three-quarters of their livestock. From then on outsiders were admitted to the grazing scheme. People with some livestock left were inclined not to make use of the scheme any longer, as it had become too costly for them. They preferred either to go on transhumance to barter milk for cereals or to stay at home in Serma, to manure their fields, the fertility of which was rapidly declining because of the lack of livestock manure. Consequently, the herdsmen refused to maintain the fire-breaks. For the chief this was not really a problem, for he could hire a bulldozer from the public works department in Douentza and the ODEM supplied the pastoral association with fuel.

When the motor pump at Bunndu Naange broke down in 1987, the ODEM supplied the association with a new one, worth FCFA 4.5 million, at a depreciation rate of FCFA 100 000 a year, which the chief paid only once, according to ODEM staff. Huge advances are asked from the herdsmen at the start of the project, which are not paid back when the motor pump fails, as happened in 1991. The herdsmen feel cheated because of all these incidents. When, in October 1991, a huge bush-fire broke out on the Seeno-Manngo they did not bother to extinguish the fire. The whole grazing scheme was set alight. A week before the fire broke out, the chief, with amazing foresight, had his sons create a fire-break to protect the equipment at the borehole. Neither he nor the staff of the livestock service showed up in the village, because they were occupied with the preparations for receiving a delegation of European amateur aviators, who came with their aircraft to bring money for a new project to protect the elephants in the area.

During our stay the project was still a showcase of ODEM. It has been the

only functioning range management project ever since the ODEM was established. Even in 1990, when it was clear that the whole thing was falling to pieces, a World Bank delegation was shown the project. The experts were introduced to the committee, which willingly answered questions about the benefits members gain from the project. In the absence of an interpreter ODEM staff did the translation, which resulted in ODEM staff being interviewed rather than local people. After half an hour the team had to leave, as their dinner was waiting at their hotel in the regional capital 300 kilometres from Serma[18]. This type of evaluation has led to yet another well-digging programme. At the end of our stay, tractors, bulldozers and caterpillar tractors were roaming over the Seeno-Manngo. The people did not know what was going on, because they had not been informed. As they said: 'these cars are not used to stopping in our village, they have to keep on running' when another cross-country vehicle raced at 80 kilometres per hour through the village. A young herdsman summarized the situation as follows: 'it seems they have sold our land'. Still, this kind of mission may lead to very favourable remarks on the scheme and on ODEM:

> . . . The creation of new structures on the basis of grassroots solidarity can be an interesting option if it meets a need for collective action and a genuine common interest. In the case of ODEM, this approach was able to alleviate the deficiencies of the former herder cooperatives, fill an organizational vacuum which was preventing the full exploitation of existing boreholes and finally to organize self-help by grassroots producers . . . (Sylla, 1989: 17)

DISCUSSION

Although we have a different opinion on the merits of the pastoral association, this last quotation points towards an interesting direction for future research. It says that this grazing scheme was 'able to alleviate the deficiencies of the former herder cooperatives' and 'fill an organizational vacuum which was preventing the full exploitation of existing boreholes'. What, then, were the deficiencies of former herder cooperatives in Central Mali and what kind of dynamics created the organization that filled the vacuum?

It is very likely that the unpredictable behaviour of pastoralists was one of the main deficiencies of earlier attempts at pastoral development. The herdsmen of the Seeno-Manngo adapt to the vagaries of the ecological environment by very flexible strategies of resource use, characterized by a high degree of mobility and individualization, as is common throughout Africa (see, for example, N. and R. Dyson-Hudson, 1980). Consequently, their capacity for collective action is limited. Vague notions of tenure of pastures, which we labelled 'territoriality', are congruent with this type of organization of resource use, because these notions allow for a high degree of flexibility, individuality and mobility.

The ODEM is well aware of this problem. As a staff member of ODEM

complained '. . . the Fulbe know nothing about organizing themselves. For every small decision they run to their chief, so I had to make use of the chief to get the project going'. He forgets that he himself did little to improve the organizational capacities of the population. What do herdsmen know about 'presidèn', 'sekretèr', and 'tresoré'[19], when they have been closed off from the modern world all of their life?

Thus pastoral organization of land use is designed to cope with environmental uncertainty and is standing in opposition to the way ODEM would like to organize the exploitation of the pastures of the grazing scheme, that is, in a rational and controlled manner based on scientific indicators. If we take a look at the way ODEM is organized, we see something fundamentally opposed and even hostile to flexible pastoral organization. ODEM is dependent on funds from donors. These funds are the life-blood of this organization. The programme and performance has to have credibility *vis-à-vis* the donors rather than *vis-à-vis* the pastoralists. The donors demand a certain performance, which is measurable and proportional to the money invested in the organization. If they want grazing schemes, ODEM has to produce grazing schemes. If they want wells and boreholes, ODEM will have to perform. If not, the flow of money will stop and the survival of ODEM will be at stake. ODEM has no choice but to satisfy the donors' wishes. At the same time, donors rely on expensive experts, who produce superficial reports based on twisted translations of socially desirable statements by intimidated informants. As a consequence, ODEM has no choice but to adopt an organizational structure in which every level of the organization is oriented towards the top rather than the bottom.

Consequently, all the programmes designed and executed by an organization like ODEM are tailor-made to meet the criteria of measurability and performance set by the donors. ODEM started the grazing scheme by drawing boundaries in a space, where none were known before. Science and law as ideologies played a very important role here. Scientific indicators were used to design the scheme. These indicators were not based on the volatile character of the ecological environment but on scientific models developed at ranches where conditions are controlled. The law was used to chase the population off their pastures. So social reality is forced to adapt to scientific requirements. If these cannot be met, the scheme is not considered to be 'managed' and according to these standards the entire venture is then a failure.

So it was logical and practical to engage the chief and to make use of the local political hierarchy to organize the scheme and make it work. This hierarchy was used as an organizational device to reduce the uncertainty involved in managing pastoralists. It was inserted into the organization of the scheme, as is often recommended in development literature. The chief played his role very well. He managed to get the scheme functioning, which was facilitated by internal strife among the pastoralists. Prominent individuals at

local level were bought off with free access to the scheme. Some people were scared off by the chief's powerful position in the government of the day and his relations with the general director of ODEM. Others were herding his cattle and had no choice but to comply. ODEM had to 'pay' him by supplying him with the means to get the scheme going again and by abandoning control over the financial management. All the supplies had to come through his village Boni, the subdistrict capital, with his car, while his sons served as overseers at the borehole. The price was plenty of opportunity for the chief to profit from the scheme. The only option left for the herdsmen was *not* to extinguish the fire that threatened the scheme. At that time the chief did not dare to show himself on the Seeno-Manngo. A new regime had come to power in Mali in March 1991, and his power base was crumbling. So, what is labelled scientific or 'rational' management is in fact a strategy to reduce the uncertainty involved in the management of the grazing scheme. Professionally educated experts fulfil an important role in this reduction of uncertainty. Their advice is used to legitimatize management decisions, through which access to the scheme is denied to the majority of the pastoral population. These experts in turn have no interest in creating difficulties. Often they are hired on the basis of short-term contracts. Their interest is in the next contract and not the scheme. Their value as experts is to some extent related to their capacity to calm the nerves of those responsible by writing soothing reports. Of course pastoralists do not read expert reports, but the scheme was never designed to reduce the uncertainties in their income anyway. They are participants, but in reality they have no power at all over management affairs.

From the perspective of pastoral tenure, the scheme is a perfect example of 'enclosure of the commons'. Originally the pastures were open-access resources for those who had access to the traditional wells in the neighbourhood of the scheme. The pastures were appropriated by the pastoral association (the chief), when it acquired control over the borehole and consequently over access to the scheme. This appropriation was legally justified on the basis that the pastures belong to the state. The state in turn has delegated the authority to manage pasture land to the ODEM (although according to the law this is not possible), which subsequently created the pastoral association around the chief to implement the project. There is no law that forbids or allows this kind of programme, nor is there a law protecting the rights of pastoralists to their pastures[20]. In this case wealthy pastoralists have access to the scheme, while the poorer majority does not. The absence of protest has been taken as an indication of the existence of 'grassroots solidarity'. The pastoral community in Serma has been divided by the scheme into two groups, which is in clear contrast to normal pastoral tenure arrangements.

It is hard to call this range management scheme a failure. Although the majority of the local herdsmen lost because of the scheme, most of the goals

of the scheme as an organization were met. Pastures were managed, access to the scheme was regulated, 'over'grazing stopped. This must also be the reason why the pastoral association was provided with the necessary equipment twice. There was considerable pressure on ODEM to make it a success, because the programme as such was under constant criticism (see Gallais, 1984).

However, from the perspective of the pastoral population the scheme has far-reaching negative effects. Tenure relations have been changed fundamentally by the scheme. The Fulbe as a group have lost power over their pastures, to the benefit of a few. A considerable part of their rainy-season pastures have been enclosed, most of them for the whole year. Considering the fact that there are many more boreholes that are not fully exploited, and the pressure exerted by the herds from the Inner Delta and at times from the Gourma, it is urgent that action be taken to devise some sort of pastoral tenure code that protects local herders from these types of interventions. Furthermore, the organization responsible for grazing management should be modified to better address the problems of pastoralists.

NOTES

1. The fieldwork for this research was carried out with a grant of the Netherlands' Foundation for the Advancement of Tropical Research (WOTRO, grant W 52-494). The project entitled 'Fulani society in a changing world: Central Mali' was undertaken by the two authors, with fieldwork being done from March 1990 to March 1991 and May 1991 to January 1992 in two villages in the Douentza *cercle* of Central Mali.
2. Mali is administratively divided into seven regions, which are subdivided into *cercles*, in turn divided into *arrondissements*.
3. Peul or Fulani, as they are called in French and English respectively.
4. Edal is Fulfulde (Fulbe language) for the 'big *edi*' (*Sclerocarya birrea*). At present no *edi*, even a small one, can be found at the spot.
5. United States Agency for International Development.
6. Reyna (1986) reports the same concentration of land in the hands of a few people in development projects in Burkina Faso.
7. The price of a well, which was FM (Francs Maliennes)14 million on average in 1973, rose to FM 54 million in 1978 (Gallais, 1984: 235). At present (1995) these wells are having to be deepened at a cost of FCFA 20 million per well (100 FM = 50 FCFA = 1 FF (Franc Français)).
8. This type of 'rational' and 'sustainable' management is not uncontested nowadays. The case for overgrazing by irresponsible pastoralists has proven less convincing than originally thought, as recent literature indicates (Behnke and Scoones, 1992; Ellis et al., 1993).
9. We have no data on the fines that were paid at the start of the project. During our stay in the region two cases of illegal grazing occurred. In one case a fine of FCFA 80 000 was paid, and in the other FCFA 400 000. It seems that the fines were paid directly to the chief of Boni. It is not known what happened to the money afterwards. The vice-president of the pastoral association in Boni told us that even he did not know where the money went.

10. Meyersoun was one of the foreign experts who was supervising development of the scheme. We met him in Djibo (North Burkina Faso) in October 1991, where he was working for the Burkina livestock service.
11. The parallels between this type of tenure of water resources and the tenure of religious sites by Aboriginals in Australia discussed in Ingold (1986: Ch. 6) are striking.
12. A survey had been carried out, showing the pastoralists' dissatisfaction with these wells: 98% of the pastoralists blamed the ODEM wells for allowing uncontrolled occupation of land on the Seeno-Manngo by agriculturalists (ODEM, 1978). This may explain the different organizational format of this scheme.
13. This could not be confirmed by the chief of Boni, because he refused to grant us an interview during the two years of our stay.
14. This may be explained by the fact that Mali entered the CFA zone in 1985, with 1 CFA worth 2 Malian Francs (FM). The contribution to the scheme was probably not reduced by 50% at the level of the borehole when the FCFA was introduced. If one calculates the real costs of the scheme, the operating costs come very close to this figure of 50%, although somewhat lower. What happens to the rest of the money is not known. See also note 9.
15. In 1991 he bought a second car, a Lada four-wheel-drive vehicle.
16. A lot of families left because they lost everything in the drought of 1985.
17. An important Twareg chief from the Gourma was granted permission to exploit a borehole only a few kilometres from Bundu Naange for his own herd of several thousand head of cattle.
18. It was in fact even worse than described here. Some members of the team did not even have the politeness to lift their sunglasses while interviewing, which everybody in the village found very impolite. We were asked if they were from our country. Luckily there were no Dutch experts in the team, so we could answer in all honesty that they were from a different tribe.
19. These are French loanwords to depict the functions within the herders' committee.
20. See Lane (1992) for an even more poignant example of donor-sponsored expropriation of pastures of Barabaig pastoralists in the name of 'development'.

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