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THE DYNAMICS OF LAND TENURE:
The Case of the Bakel Small Irrigated Perimeters

by

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INTRODUCTION

This paper is a preliminary exploration of the dynamics of land tenure on some small-scale irrigation perimeters along the Senegal and Falémé Rivers in the Department of Bakel in the Tambacounda Region of eastern Senegal. One of the principal motivations for this research was the impression, based on previous writings about the region, that the traditional elites within the stratified societies whose members were the intended beneficiaries are extremely resistant to activities which threaten their high relative status (Adams 1977, 1985; Weigel 1982). If this impression were justified, one would expect to observe either total failure of the irrigation effort or continuous efforts on the part of elites to control the project or appropriate its benefits. The former is not the case; the latter may well be.

The perimeters were mostly established in the mid-1970s, in a period when an unusual coincidence of factors were at work:

- the drought had severely damaged the local economy, making rainfed agriculture and livestock activities highly risky;
- the flow of remittance income from migrant workers in France was threatened by tightened immigration regulations and French unemployment;
- population pressure had reduced the land surplus which many of the villages had felt they had previously enjoyed;
- the Government of Senegal was ready to extend its development activities into the Eastern part of the country for the first time;

-- foreign donors, notably USAID, had become concerned about the preparedness of riverine populations for the grandiose future development plans for the Senegal River basin.

Most of these circumstances remain to this day. The only one which may have changed is the climate: two good rainfall years have been sufficient to convince many that the drought is over. The drought may have been the factor which made the initial implantation of irrigation acceptable to local elites because the survival of society, including elite privilege, was at stake; if so, we should now be able to observe an intensification of the effort to control, appropriate or even destroy the project. While this paper does not reach definitive conclusions about this, it makes some (hopefully) provocative observations about the likely course of irrigation development in the region.

I. Background

A. Land Law

Senegal was one of the first nations in francophone Africa to enact a comprehensive land law. Enacted in 1964, the "Loi sur le Domaine National" was an attempt to combine the best aspects of customary African tenure systems with a modern egalitarian and democratic foundation. The right of private ownership of land was not recognized; the State was to be the manager of the national domain, which was virtually the entire land area of the country.* The state was given the right to designate any part of the national domain as being of public utility, and thus to take it from its previous users. In the absence of the exercise of eminent domain, however, farmers maintained their use rights without condition other than that they continue to cultivate the land actively. At the same time, the inegalitarian aspects of customary land

* Individuals were given a grace period of six months following the enactment of the law to register their holdings and receive title. Virtually all of the land so registered was urban.

tenure were made illegal: traditional landowning nobilities, present in most of the nation's ethnic groups, were dispossessed of any claims--tithes and rents--which they had on farmers in return for access to "their" land.

While the law made the State the guarantor of the national domain, it envisioned the establishment of a system of local government, one of whose major tasks was to manage rural land in a way that reflected local priorities and conditions. The administrative reform of 1972 established a system of communautés rurales, rural communities, organized according to local geographic and ethnic concerns, with a locally-chosen conseil rural as the legislative body responsible for land distribution. Until the reform, Senegalese local government, like the French, was merely the local manifestation of the central government, a quasi-military corps of governors and préfets. Under this system, the lowest level of government was the arrondissement, administered by a sous-préfet; the communautés rurales were established as subdivisions of the arrondissements. Thus the new system is intended both to bring local government one tier further down and to increase local participation in local government.*

The administrative reform was implemented region by region over the decade after 1972. The Eastern Senegal region, in which Bakel is located, was the last one to hold elections for the rural councils; these took place in 1982. The councils have done very little thus far, but it is clear that they will play a larger role in the future, assuming that the State continues its present policy of disengagement and decentralization. It also appears likely that the rural councils may serve as a modern means for traditional élites to

* On the other hand, the independence of the communautés rurales from the central government is far from complete: rural councils' decisions must be approved by the sous-préfet, who in turn is closely supervised by his superiors, i.e., Dakar (see Hesselting, p. 16).

maintain their control, legitimized by the trappings of democratic processes: in most of the villages we visited in the Bakel Department the rural councils were firmly controlled by the same families who held the land.

B. Traditional Soninké and Toucouleur Land Tenure Systems in the Senegal River Valley*

The Soninké ethnic group is concentrated in the region surrounding the three-way boundary of Senegal, Mauritania and Mali. They are the dominant group along a 80 kilometer-long stretch of the Senegal valley on the Senegal side, from Ballou to Waoundé; Bakel, the principal town, is roughly midway. Soninké social structure is rigidly stratified into three broad groups: nobles, casted people and "former" slaves; only the former has any control over land although virtually everyone farms. Farmers from the latter two groups or from minority ethnic groups gain access to land in return for one or more of a variety of payments, depending on the type of land and the relationship between the landowner and the farmer. The village chief, while preeminent in decisions about village lands, has no authority over the way other noble families use their land, including traditional forms of mortgage and sale.

Within a family (more precisely a lineage segment consisting of brothers, or ka), the oldest male, the kagumme is head of the family production-consumption unit and is responsible for land management. The ka farms a large part of its land as a common field (té khoré), with an organization of work and distribution of product decided by the kagumme. Individual men and women usually have their own, separate plots which they farm in their spare time; the women's individual fields provide them with the only income over which they have any control.

* This is a very brief summary of two complex systems; for more detail on the Soninké see Pollet and Winter 1971 and Weigel 1982, and for the Toucouleur see Minvielle 1977 and Ngaido 1986.

Weigel, who has done the only previous in-depth work on Soninké land tenure dynamics, has said:

Tant la maîtrise que la tenure de la terre reflètent des rapports de dépendance traditionnels, subordonnés . . . à des rapports sociaux caractérisés par une forte hiérarchie entre individus (libres et captifs, aînés et cadets) dont le fondement réside avant tout dans la maîtrise des moyens de reproduction humaine . . . Cependant, . . . maîtrise et tenure de la terre témoignent du développement des rapports contractuels entre individus et segments de lignage qui induit dans une minorité des cas une dépersonnalisation progressive des rapports sociaux permettant aux rapports fonciers de déterminer les rapports de production.

D'une manière générale la hiérarchisation de la société s'est maintenue sous une forme dégradée malgré les perturbations a priori radicales que furent l'abolition de l'esclavage, la généralisation de la migration et la promulgation des lois foncières. (Weigel 1982 p. 318-9.)

The Toucouleur are the dominant ethnic group in the middle Senegal Valley, the region which begins immediately downstream from the Soninké zone. They also are in the majority in the valley of the Falémé from Sébou upstream beyond Sénoudébou, all in the Department of Bakel. They are sedentarized Pulaar-speaking people, with a strong tradition of livestock-raising which has been deeply affected by the recent droughts.

The Pulaar (Toucouleur as well as the not-quite sedentarized Peul herders) have a system of land tenure with some similarities to that of the Soninké, but some fundamental differences as well. Society is stratified into the same three broad groups: nobles, casted people and captives.* Only the nobles possess large quantities of land, although here, unlike the Soninké

* The Peul are not as rigidly organized into castes as are the Toucouleur. The nomadic or transhumant mode of production is not likely to exhibit as great a degree of social differentiation as does a sedentary farming mode: one can have someone else farm one's land and keep pretty good track of his performance in order to ensure that the surplus will be delivered as required, but if someone else has one's cattle on a six-month-long transhumance, it would be very hard to control offtake (or permanent emigration, given the value of the herd!). Thus status among Peul is determined by herd size, but dependency relationships among Peul are limited in scope.

case, it is not inconceivable that the other groups own land. Like the Soninké, the Toucouleur devolve land management responsibility upon one member of the family, the joom leydi; unlike the Soninké the position is inheritable from father to son rather than being a strict gerontocracy. Also, there is no tradition of cultivating in common: land is farmed individually or by the adult members of a nuclear family. In dryland agriculture, men grow the basic grains--millet, sorghum and maize, with little assistance from their wives and daughters. Women have access to individual plots to grow peanuts for food and small amounts of cash. Women's primary productive economic role is, however, livestock, a vestige of the transhumant or nomadic past of their people. The value of the milk in some Pulaar families with substantial herds is very great, and women generally control the income flowing from this source.

C. The Origins of the Irrigated Perimeters

The Bakel small irrigated perimeters (BSIP, in AID acronym) were established as a result of local initiative. Migrants returning from France, notably Diabé Sow of the village of Koungny, wished to use the funds they had accumulated during their years abroad for some useful purpose at home, to prepare for the inevitable time when France's demand for manual labor would dry up. With the help of a PVO, small irrigation systems were developed in several villages in 1975, and USAID was approached by the PVO to finance pumping equipment. Flush with Sahel drought-related funds, USAID converted this small request into a \$3.1 million project, which became \$7 million by the time it was contracted out in 1977 (USAID 1977). The project's purposes were to provide immediate drought relief and also to permit learning-by-doing for an eventual expansion to medium- and even large-scale irrigation systems. Simultaneously SAED, the parastatal agency created to execute the ambitious program of Senegal River Basin development, asserted its control of all

irrigation in the Bakel Department, even that which had preceded its arrival. From a self-generated and modest effort, BSIP quickly became bureaucratized, capital-intensive and outward-oriented. The Soninké, led by Sow, organized a Federation of farmers, and engaged in unremitting resistance to SAED's strictures; for an insider's chronicle of this situation, see Adams 1977 and 1984.

Sow's original idea was to generalize the family-wide té khoré to the entire village production group, approaching a socialist model of cooperative production. Thus the earliest irrigated perimeters were collective in nature, with labor being contributed equally by all participants, on a schedule determined by the head of the groupement--the analogue of the kaumme. The produce was divided equally among all participants, as well. SAED pushed for individualization of parcels, of farming decisions and distribution of rewards, although the groupement as a whole was to remain responsible for reimbursement of input loans. In practice in most of the Soninké villages, the perimeter extensions after the first two or three years have consisted of the creation and expansion of family plots, frequently but not always managed as té khoré fields, with the village collective field becoming decreasingly important.

It is important to note that both systems, the collective model espoused by Diabé Sow and the individualist model promoted by SAED and financed by AID, are revolutionary in that they are based on the principle of ignoring caste distinctions in granting access to irrigated land. By diverting attention away from this fact, the struggle between SAED and the Federation has most likely served the interests of the traditional élites, whose attachment to ideology or theoretical arguments about incentives is unlikely to be strong and whose efforts to maintain their authority are unremitting. The drought

made irrigation possible, as the head of a Soninké groupement was quoted as saying in 1980 (Bloch 1986) and did say again in 1987:

"Quand quelqu'un se noie, si vous lui tendez un objet, fut-il un couteau, il s'en saisit pour avoir la vie sauve et c'est dans cet esprit qu'on avait accepté la SAED."

But the drought is widely perceived as being over, and now the double-edged threat that irrigation represents may be more easily dealt with by an elite whose fear of drowning has diminished. If the traditional agricultural system, combined with remittance flows, can once again provide a fairly reliable basis for the restoration of the old patterns of dependence, nobles may prefer this to continued risky experimentation with innovations like irrigation. Insofar as the power of the nobility has not been broken yet, and there are few signs that it has been, irrigation may therefore face eventual failure.

II. Characteristics of the Perimeters at their Inception

As the principal author of the AID Project Identification Document (the first of a series of project appraisal reports AID requires before funding a project) in 1975, I should be able to recall the extent to which land tenure issues entered into project design at the beginning. Unfortunately, the initial mission was not very sensitive to this question. I do remember asking in one village whether the land designated for the perimeter was being used for dryland agriculture, and was told that it wasn't. I also recall being assured in that village that the entire groupement would be the "owner" of the land once the perimeter began to operate. That, however, was the extent of the preliminary investigation into land tenure. The Project Paper (USAID 1977), two stages later in the AID project development schedule at that time, has a long social analysis section. It discusses land tenure briefly, in the context of intra-family social organization of production, but does not

mention any plans for the tenure status of the land under irrigation. Thus AID's study process did not identify the possible implications of inequalities of control of land for project outcomes.

SAED, as the implementing agency, was well aware of the need to clarify landholding issues. While its technicians identified irrigable land according to technical considerations (not always correctly: in the Toucouleur villages the original zone chief, a Frenchman, appears to have made several major mistakes in choosing perimeter sites), the village chief was always consulted and the agreement of the traditional landowners always requested (and, apparently, always received). It is rare that only one family's lands were involved; this probably had to do with risk-sharing, or perhaps payoff-sharing. In all cases, the traditional landowners ceded to the groupement the right to use the land, without relinquishing their traditional claims of ownership. There appears to be a consensus in the villages that if the groupement stops irrigating, the traditional landowners may take back their land.

SAED imposed a condition of equal access in return for its assistance in developing the perimeter. In other words, the groupement was to be open to all residents of the village who wished to join, regardless of caste or sex. In no village did all households participate, though the vast majority usually did. We have no information yet about non-participants, except for participants' opinions that they were the most conservative, xenophobic residents who feared that the village would merely be working for white people. In most villages, SAED instituted a lottery system for plot choice, with no discrimination between castes. In the Soninke villages, the lottery was generally by ka, or extended family, whereas in the Toucouleur villages the allocation was made by head of nuclear household. Some villages had their

own system: two villages, Ballou and Guitta, arranged plots in the same general design as residence patterns in the village, both arguing that this would permit residential neighbors to be agricultural neighbors as well. In these cases, SAED exhibited more flexibility than it is generally credited with by accepting these villages' systems.

Notwithstanding SAED's imposed condition of equal access, there is a great deal of variation among villages in women's access to irrigated land. In nearly all the Toucouleur villages, women are simply excluded; the justification usually given by the (male) members is that they are incapable of land-clearing, which was the primary prerequisite for membership in the groupement.* In the Soninké villages married women are almost always counted as members of the ka for the purposes of membership in the irrigation groupement.** Sometimes, as in Ballou I, their participation awards the ka the same amount of land as men's participation does; sometimes, as in Aroundou, their participation counts only half as much. Because households generally have more adult women than men due to polygamy and emigration of men, the amount of land a household will have depends strongly on how women's participation is treated.

Another principle upon which SAED insisted was equality of plot size per participant. This too was a decision to enforce equity of land distribution. The problem is that some families participate more than others: preliminary

* Most villages accept men as new members without the clearing prerequisite if they pay a small membership fee; women are not given the same opportunity.

** The one known exception is Moudery II, which was founded in 1985 as one of the first perimeters which originally was to have been financed by AID under the second Bakel project, Irrigation and Water Management I. Its exclusion of women has created serious conflicts within the village, and a women's group has petitioned SAED for a women-only perimeter, which SAED apparently will construct.

evidence shows that households of nobles have more participants than households of casted people or captives. We do not know if this is because (1) nobles' families are in fact bigger; or (2) nobles register a greater proportion of their family members as participants, in order to maintain a disproportionate influence within the groupement; or (3) nobles are more willing to bear the risk of innovation; or (4) some or all of the above. For whatever reason, in some villages, one finds that the nobles have relatively large holdings: in Aroundou, for example, the xooré (nobles) have 33.2 percent of the plots although they have only 24.5 percent of the participants; moodi (clerics) have 22.8 percent of the plots and 17.0 percent of the participants. All other groups have, therefore, a smaller proportion of plots than participants. One hypothesis to test which emerges from this observation is that traditional landowners have little interest in project success, and may even have an interest in failure. If the traditional landowners can appropriate infrastructure created with public funds, why should they permit a wider sharing of the benefits? In other words, they may be able to benefit disproportionately from the irrigation works developed for the entire population. But our preliminary data do not permit us to know if the caste distribution of participants is similar to the caste distribution of the village population. In other words, we do not have the village demographic information needed to verify the representativeness of the list of participants. This information will be gathered during the second round of surveys.

III. Dynamics of Land Tenure as Irrigation Develops

Most of the Soninké village perimeters can be called qualified successes from the point of view of the AID project, in that they have operated more or less continuously at more or less full capacity for a decade or more, and that

there is a clear recognition within the villages that expansion of their size is worthwhile. Most of the Toucouleur village perimeters can be called failures, because they have not met these criteria. There are no adequate production data, and certainly no reliable cost data, which would permit a rigorous economic analysis of the perimeters' operation, so that our judgment about success must remain qualitative, at least for now.

There are, however, possible variations in the degree of success, notably in terms of income and asset distribution within villages. The introduction of small-scale smallholder irrigation systems into a stratified society can lead to a variety of outcomes with respect to the dynamics of land tenure:

1. The project survives and even grows over time, and:
 - a. The original beneficiaries retain their land and even increase their holdings proportionally as extensions are built;
 - b. Some of the original beneficiaries lose their land through abandonment or failure to pay debts to the groupement, leading to:
 - increasing concentration of landholding in the hands of elites and/or commercially-minded farmers;
 - no change in land distribution among families or castes but merely a reshuffling to former non-participants and outsiders (this is unlikely, given the absence of institutions such as land markets).
2. The project fails (stops operating, thus effectively eliminating all participants' access to irrigable land) due to:
 - a. unwillingness of elites to participate in irrigation because they see it threatening their social status;
 - b. inability of elites to get their dependent farmers to pay tribute and to farm their irrigated plots for them, as they traditionally have been able to do in dryland farming;
 - c. successful takeover of the scheme by elites which causes caste people and captives to opt out of the scheme;
 - d. other causes altogether.

The first research visit conducted as part of our study program, in January 1987, was intended to address this set of issues, as a preliminary to the establishment of a longer-term field research presence in collaboration

with the University of Dakar (C.R.E.A., Faculté des Sciences Economiques). The two weeks we spent in Bakel were dedicated to a key-informant survey of the situation of land tenure arrangements on the irrigated perimeters, together with a census of plottolders. It was not possible to gather information on all the perimeters; the Soninké villages belonging to the Federation wanted more information about the goals and methods of the research before meeting with us. The fifteen villages from which data were gathered, which included three Soninké villages and all but one of the Toucouleur villages in the project area, presented us with a substantial diversity of histories and of current realities and, as is usual in preliminary visits, raised many more questions than they answered. A second research visit, scheduled for August 1987, will complete the data necessary to establish the baseline and put it into the context of the pre-existing structure of landholdings and social organization.

The rest of this section consists of a series of case histories which provide glimpses into the complex network of issues surrounding the dynamics of land tenure and its relationship to the success of small-scale irrigation. The first case, that of Ballou, represents the problems which emerge when project success is both obvious to everyone and probably irreversible. The other cases, drawn from Toucouleur or mixed-ethnic group villages, are examples of situations where almost any future outcome remains possible.

Ballou is a village of moderate size--2,500 inhabitants--on the Falémé, just above its confluence with the Senegal, and is the furthest upstream of the Soninke villages. It is probably the most isolated of the Soninke villages during the rainy season, as it is the farthest away from the all-weather road. It has ample lands, both fondé and jeeri. It has a single dominant family, the Niangané, many of whom have had successful migration

experience, not only in Europe but in North and Central Africa. While its location is relatively southerly, implying more rainfall than at the northern, downstream end of the Department of Bakel, there does not appear to be any more reluctance to irrigate in Ballou than in, say, Gandé, at the downstream limit of the Department.

Ballou has the largest irrigated area and the largest number of group members of any of the villages affiliated with the BSIP except Bakel itself, with 720 members as of 1985. In that year, an election of the leadership of the groupement (production group) led to a schism. The former president, who had been defeated by his half-brother, led the schismatics, who formed a second groupement, Ballou II, and sought land for a perimeter and help from SAED in preparing it. The second task was easy; SAED offered help with a grader, as they intermittently had during previous extensions of the original perimeter. But getting land was not as easy.

The procedure envisioned by the law is to apply to the Communauté Rurale (CR) for use rights; in principle there is no reason why the CR should refuse local inhabitants who wish to use land productively. But the schismatics did not go to the CR initially, but rather to the village chief, as customary law prescribed. The chief, a Niangané also, refused to grant them land. They then went to the village's representative to the CR, also a Niangané. He refused to intervene. So finally, as the third step, Ballou II took its request for land to the CR itself. The principle became fact: the CR granted the groupement the land it requested.

There are several possible explanations for the split, and several more for the history of Ballou II's land request. First, there is the simplest explanation that a defeated president opted for exit after having had relatively complete control of the perimeter since its inception; the

corollary is that the chief and the village CR representative subsequently wished to punish their cousin for splitting up the groupement. Second, the split might have become inevitable due to the large size of the membership. In other parts of the Senegal River Valley, groupements tend to be much smaller than in Bakel, although as Fresson (quoted in Bloch 1986) said, homogeneity of membership appears to be more important than size of membership. But none of the groupements she studied was anywhere near the size of Ballou's. The relatively great social cohesion of the Soninke might predict that larger groupements would be possible there than among Wolof or Toucouleur. Still, 720 members (of whom 190 were men, grouped in 59 kas) is a lot under any circumstance. The breakup may have been inevitable. Third, there is the possibility that the split was only partly related to the election, and partly also to increasing social tension brought about by the equalization of incomes and thus status which irrigation implied. The Ballou II membership list shows that 57.3 percent of the members are komé, "former" slaves, whereas none of the Ballou I members are; 93.5 percent of Ballou I members are xooré, nobles, and only 36.1 percent of Ballou II are. The interpretation is that the split occurred because caste issues were beginning to be raised--the irrigated perimeter was (finally) judged to be a success, so the traditional leaders decided they wanted to control it, which meant reducing the role of the casted people and slaves. Seydou was probably a relatively minor member of the Nianqané family, who legitimized the original perimeter at a time when the village leadership was unwilling to commit itself to irrigation; the komé may have asked him to serve a similar role in getting them out from under the dominance of the traditional leadership in Ballou I. Whatever the legal status of the CR and the equality before the law of all Senegalese, it is highly unlikely that a group of komé could have succeeded in

persuading the CR to grant land to them without a leader from the xooré or moodi classes.

The quote on page 5 becomes relevant here. The drowning person is not representative of the entire village, but only of the elite. The knife is slicing away at the nobles' grasp of the local economy which is manifested by their control over land; once irrigation has succeeded, their ownership of large areas of dryland is irrelevant because irrigation will be the principal source of farm income. Thus it is only the elite's livelihood which is threatened by SAED: the dispossessed view irrigation as their way out.

Sénoudébou/Guitta: These two Toucouleur villages, which were once a single village, illustrate other aspects of the stratification problem, where the elite seems to be more firmly in control. The original split of Guitta from Sénoudébou was that of primarily casted people, and the story of Guitta's first perimeter on Sénoudébou's land indicates that Guitta still considers itself dependent on Sénoudébou to some extent. Furthermore, the dynamics of Sénoudébou's allocation of land on their new perimeter suggests that the elite is alive and well in the Falémé region.

When SAED technicians came to the two villages to encourage them to participate in irrigation in 1976, they quickly found a perimeter for Sénoudébou. Guitta had no appropriate land (i.e., flat, not too sandy and near the river), but with SAED encouragement Sénoudébou agreed to allow SAED to develop a perimeter on its land for Guitta. In the first year or two, Guitta's perimeter flourished, and Sénoudébou's did not.

Then, the following events occurred in an order that is not totally agreed upon locally: Sénoudébou's perimeter was virtually abandoned (because a hippo had wreaked destruction, according to one account); SAED shut down Sénoudébou's pump because the village had not repaid its input debts; cattle belonging to Sénoudébou residents began eating crops and trampling bunds on Guitta's perimeter; Guitta irrigation farmers captured and held for ransom some of the "invading" cattle; Sénoudébou asked for

its land back; one of the two villages gathered up its firearms and threatened to do battle with the other village, which also gathered up its firearms, over the cattle and the land; the sous-préfet was asked by one village to become involved, and managed to outrage both villages. (Bloch 1986, p. 34.)

When the matter was brought before the sous-préfet, Guitta, which by the evidence presented above was the first-aggrieved party, humbly submitted to the judgment that they should leave their perimeter. SAED then compensated them by developing a new perimeter on their own land, further from the river and with no possibility of double-cropping. Why did Guitta not fight for its rights? One explanation is that they did not want to confront their cousins of Sénoudébou, who had always been their neighbors, especially when the SAED offer to develop a new perimeter gave them pretty much the same income-earning potential as they had had before. Another explanation is that being in the right is not enough; if the traditional rulers (the Sy family, in both villages) made the decision that Guitta had to leave its first perimeter, there was no way that the casted Guittans could object.

The other story concerns Sénoudébou alone. The first perimeter developed by SAED was done on land of fairly poor quality, in which lateritic soils eroded from the nearby jeeri reduced productive potential. When SAED prepared an extension in 1983, the village undertook a total redistribution of the land: the nobles (strictly, the inhabitants of the village district in which the nobles lived) divided the new perimeter among them, and the captives (strictly, the inhabitants of the village district in which the captives lived) were left to divide the old perimeter among themselves. Thus the extension enabled the nobles to benefit disproportionately, since they alone got access to the better land. While the captives are better off than they had been since they have more land than before, the process of expansion has been inequalitarian. Note that this is all moot, because neither the old nor

the new perimeter has operated since the new one was completed (except for the hand-watered women's gardens). The reason for the shutdown could be the official one: hippo damage making debt repayment impossible and SAED hanging tougher than the villagers thought; or it could be another one: the nobles really had little interest in the success of the perimeter but wanted to ensure that the captives did not get the better land. Also, since the debts of the two perimeters were combined, nobles could effectively block efforts of the captives to reopen theirs.

A third issue of interest emerges from Sénoudébou. The rural councils which govern the CRs are supposed to be democratically elected. Most representatives in the Bakel area thus far have been nobles closely tied to the village chief's family. In early 1985, a minor sensation was created when Sénoudébou chose Salifel Dembéle, a maccudo (captive), as its representative to the Kidira CR, and he was in turn chosen as President of the CR. The sensation was tempered once it became known that Salifel was a dependent of the village chief's family. The lack of independence of Salifel was shown by the land distribution accompanying the completion of the second perimeter: the nobles got the best land.

Wouro Himadou: This Toucouleur village is the first sign that traditional elites may go beyond simply letting projects fail if they do not help them to maintain control. The President of the groupement is one of the three traditional landowners who ceded land to the groupement when it was established. The principal condition of cession was that the three were allowed to choose their parcel first, before the other members were to participate in a lottery to distribute the rest of the land. The President chose the parcel immediately contiguous to the main canal; the land on the other side of the canal was his (undeveloped) land as well. The perimeter

began and had no better or worse success than other Toucouleur villages, with members farming irregularly. Only the President has irrigated his land every year. This year only three people are farming: the three traditional landowners. The President has gone further: he has persuaded SAED to develop his holdings on the other side of the canal, and now irrigates more than 4 1/2 ha. of his land. He now has the infrastructure and the knowledge to become a commercial-scale farmer. Here is a clear case of an entrepreneurial member of the traditional elite diverting public works to private purposes. It is likely that similar things will occur in other places as well.

Gangala: This village was little more than a Peul herders' camp before the opportunity for irrigation arose. The President of the groupement is a Peul, but most (45 of 64) of the members are Soninké from neighboring villages, notably ones across the river in Mali. The reason for this unusual situation of mixed-ethnic group membership is that the President and his family did not have enough labor for SAED to be willing to open a perimeter for them even though they had sufficient land of adequate quality. Thus they were obligated to recruit members elsewhere, and the only nearby people available and willing to participate were Soninke, except for one Toucouleur from next-door Sebou.

The difference between Soninke and Peul-Toucouleur gender division of labor created a delicate problem on the Gangala perimeter. In other Soninke village groupements, the members all registered their wives and mature sons as plottolders, which was rational given the fact that they all would work the land along with the heads of household. In Pulaar society, as previously noted, women do not do much agricultural work beyond small plots of peanuts, and none of the Toucouleur groupements register women as plottolders (with the exception of the Sénoudébou women's micro-plots). If the President and his

family did not register their wives, they would have a disproportionately small share of land on their own perimeter. So they did register their wives, following Soninké rather than Pulaar custom. Then, following Pulaar rather than Soninké custom, they determined that the women were not doing their share of the work on the land which had been registered in their names, and took over the women's land as their own. In so doing, the President and his brothers managed to accumulate more land than if they had only registered the men from the outset.

CONCLUSION

The cases discussed in the previous section go part way towards answering the set of questions with which we began. The irrigated perimeters certainly did not eliminate social inequality simply by establishing a set of rules which made access to irrigated land open to all in equal amounts, as SAED and USAID hoped they would. Neither has irrigation yet engendered a set of economic and social processes which lead ineluctably towards a more egalitarian future. But neither have the elites been fully able to reassert their traditional status and power once the immediate universal need for irrigation--the drought--had passed. The evidence from Ballou suggests that there may have been enough time for the dependent populations--casted people and captives--to perceive a life with fewer obligations to their traditional masters, and to defend this opportunity when reaction was setting in. We do not yet have enough evidence to predict whether Ballou is the most likely model for the future, or whether Wouro Himadou and Sénoudébou are. If it is Ballou, the people of the Bakel region will play an important role in the development of the Senegal River valley. If it is Wouro Himadou, some people from the region will play an important role. If it is Sénoudébou, the river will continue to flow by, and others will benefit.

REFERENCES

- Adams, Adrian Le Long Voyage des Gens du Fleuve. Paris: Maspéro. 1977.
- _____ La Terre et les Gens du Fleuve. Paris: l'Harmattan. 1985.
- Bloch, Peter "Senegal: Senegal River Basin." in Bloch et al., Land Tenure Issues in River Basin Development in Sub-Saharan Africa. LTC Research Paper 90. Madison: Land Tenure Center, University of Wisconsin-Madison. April 1986.
- Hesseling, Gerti Le Droit Foncier au Sénégal: l'impact de la réforme foncière en Basse Casamance. Leiden (Netherlands): African Studies Centre. 1982.
- Minvielle, Jean-Paul La Structure Foncière du Waalo Fuutanké. Dakar: ORSTOM, 1977.
- Ngaido, Tidiane Socio-economic Implications of Irrigation Systems in Mauritania: the Boghé and Foum-Gleita Irrigation Projects. Unpublished M.S. thesis, University of Wisconsin-Madison, Land Resources Program. 1986.
- Pollet, Eric and Winter, Grace La Société Soninke (Dyahunu, Mali). Bruxelles: Université Libre de Bruxelles. 1971.
- USAID Bakel Crop Production: Senegal. Project Paper. Dakar, May 15, 1977.
- _____ Integrated Development Project. Project Paper. Dakar, 1983.
- _____ Irrigation and Water Management I: Project Paper. Dakar, August 1985.
- Weigel, Jean-Yves Migration et Production Domestique des Soninké du Sénégal. Travaux et Documents de l'ORSTOM n° 116. Paris: ORSTOM, 1982.