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LAND TENURE STRUCTURE OF THE BAKEL SMALL IRRIGATED PERIMETERS

Baseline survey report -- Part 2

by

Peter C. Bloch

August 1988

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This paper, complementing Bakel Discussion Paper no. 5, presents a series of tables summarizing the information gathered in 1987 during visits to most of the irrigated perimeters created under the USAID Bakel Small Irrigated Perimeters project (BSIP). In addition to the key informant interviews conducted during field visits in January and August 1987, each groupement was asked to report a list of its members, along with certain demographic information about each member. An example of the questionnaire is given as Annex I. The questions about who actually farmed the parcel and the principal occupation of the plottolders did not yield any interesting information: nearly everyone declared that he or she was a farmer and that he or she farmed the plot him- or herself. The questions on gender, caste, relationship to family head, and number of plots held did give satisfactory results. The delay in the production of this report is due essentially to inaccuracies and incomplete data on the latter questions for several perimeters; while some data are still unavailable it was considered important to issue the report now, at a time when it can be useful for the initiation of work under the Irrigation and Water Management I project.*

After presenting tables of selected characteristics of the perimeters, drawn from AID and SAED sources as well as our own census, we show and briefly discuss the data from the census itself. The results indicate clearly that the BSIP project has succeeded in involving a large percentage of the population in most villages, and has given access to irrigated land to segments of the society -- women, descendants of slaves and casted people, whose traditional rights to land were derived from their relationship to noble males. We also see that the second-round dynamics, as represented by the creation of new perimeters in the 1980's, appear to be increasing the share of these dependent groups. On the other hand, the original perimeters appear to be increasingly controlled by members of the traditional elite as lower-caste people leave them.

This relatively sanguine observation about the progressive nature of the project to date will be reconsidered in future Discussion Papers, which will deal with a third round of perimeter creation begun in the last two years under AID's successor project, Irrigation and Water Management I. Preliminary information suggests that in this third round, whose origin is tied to the implementation of the national administrative reform in the form of the establishment of rural communities (communautés rurales), may present new challenges to equity: members of a new political elite may be asserting control of the land allocation process in a way that will award land on future perimeters to their own allies and clients, rather than to all willing participants as has been the case until recently.

* The Census covers 26 of the 34 perimeters in existence as of 1987, comprising 4127 of the approximately 5600 members of all groupements.

I. The Importance of the Perimeters to the Region

The BSIP project financed the creation of irrigated perimeters in nearly all villages fronting the Senegal and Falémé Rivers in the Department of Bakel. Along the Falémé nearly to its confluence with the Senegal, the population is almost entirely of the Toucouleur ethnic group; downstream from Ballou to Gandé the population is Soninké. The ethnic dichotomy is very striking, and the tables and discussion presented here maintain the distinction.

Tables 1 and 2, essentially drawn from secondary sources, show several important characteristics of the irrigated perimeters and the villages to which they belong. The principal lesson illustrated by the data is that there is a great diversity among villages' experience with irrigation. This is especially noteworthy with respect to the importance of irrigation, as measured by membership as a share of population (column 7), and to the success of irrigation, as measured by the percentage of irrigable area which was farmed in 1986 (column 6). 1987 data would presumably show even greater diversity.

Among the Soninké villages, Ballou, Diawara, Gandé and Manaël have participation rates of more than 20% of the population; this probably approaches or exceeds half of the economically active population. By contrast, in Tuabou and Golmy less than 10% of the villagers are members of the irrigation groupements. Among the Toucouleur villages there is a similar range, with five villages having 20% or higher participation rates and two having under 10%. To some extent, this may be due to the relative abundance or scarcity of land available for irrigation in the various villages, but it is probable that other village-specific social factors are equally responsible for the variations. Overall, 16% of the Soninké population belongs to the irrigation groupements, and over 20% of the Toucouleur. This is an impressive number given the modest scale of effort in the first decade of SAED and USAID involvement in the region.

There is also a wide range in percentage of irrigable area farmed. In 1986, nearly all the Soninké village perimeters cultivated the vast majority of their perimeters; the exceptions are Gandé and Galladé, apparently due to inadequate land leveling. The Toucouleur village perimeters present a much more checkered picture. Many did not operate at all in 1986; some were formally closed, among them Sénoudébou, Kidira and Sinthiou Dialiguel. Yet several experienced very high rates of cultivation, notably Guitta, Nayé, Selling and Gangala. The principal explanation here seems to be nonpayment of debts for inputs to SAED. Overall, nearly 90% of the perimeter area was farmed in the Soninké villages, compared to under 30% in the Toucouleur villages. This is as clearcut a difference between the two groups of perimeters as exists.

A third indicator of the degree of diversity among villages is the average irrigable area per groupement member (column 5). The overall average is about one-fourth hectare per member. Several perimeters, such as Tuabou and Sinthiou Débékhoulé, have more than one half hectare per member, whereas several others, among them Manaël and Nayé, have only about one-tenth hectare per member. Given the manner in which most village groupements were formed -- all willing villagers were included on the land which SAED was able to develop -- there should be a negative relationship between area per member and the participation rate. There is, in general, but there are some exceptions, notably Alahina, where both are high, and in Golmy, where both are low

TABLE 1

Selected Characteristics of Irrigated Perimeters
Soninké Villages, Department of Bakel

PERIMETER	(1) Year Founded	(2) Village popu- lation	(3) Area (ha.)	(4) No. of Mem- bers	(5) Area/ Member	(6) % Area Farmed* in 1986	(7) Membership as % of Population
Ballou I	1976	2499	120	476	0.25	88.1	30.0
Ballou II	1986	"	44	274	0.16	100.0	
Aroundou	1976	1436	76	187	0.41	99.3	14.1
Aroundou Emigré	1978	"	10	15	0.67	n.a.	
Yafera	1976	1271	102	211	0.48	62.7	16.6
Golmi Marabout	1975	2417	25	222	0.11	100.0	9.2
Koungani	1975	1415	37	160	0.23	98.6	11.4
" Marabout	1976	"	11	1	10.5	n.a.	
Bakel Kollangal	1982	8015	178	543	0.33	96.1	11.0
" Gassambilakhé	1976	"	42	342	0.12	68.8	
Tuabou	1975	1393	42	72	0.58	100.0	5.2
Manael	1976	1212	25	267	0.09	100.0	22.0
Yelingara	1976	602	18	106	0.17	100.0	17.6
Diawara I	1976	3682	96	616	0.16	87.5	26.1
Diawara II	1985	"	50	345	0.14	100.0	
Mouderi I	1976	3547	68	135	0.50	100.0	14.8
Mouderi II	1985	"	62	117	0.53	100.0	
Mouderi III	1987	"	50	59	0.85	--	
Mouderi femmes	1987	"	10	215	0.05	--	
Galladé	1976	698	38	192	0.20	12.5	27.5
Gandé	1976	585	19	89	0.21	26.3	15.2
TOTAL/Average		28772	1123	4644	0.24	87.1#	16.1

* % of Area available for irrigation in 1986 which was farmed that year.

Weighted average of the perimeters for which data are available.

Sources:

Year, Population, Area, % Farmed in 1986: SAED and USAID data.

No. of members:

Project census (SAED data on members for perimeters we could not visit).

TABLE 2

Selected Characteristics of Irrigated Perimeters
Toucouleur Villages, Department of Bakel

PERIMETER	Year Founded	Village popu- lation	Area (ha.)	No. of Mem- bers	Area/ Member	% Area Farmed in 1986	Membership as % of Population
Sénoudébou	1976	996	31	338	0.09	0.0	33.9
Guitta	1984*	259	20	80	0.25	97.4	30.9
Nayé	1982*	410	9	95	0.10	100.0	23.2
Alahina	1985#	135	19	27	0.70	0.0	20.0
Kidira	1978	n.a.	18	n.a.	n.a.	0.0	n.a.
Selling	1977	350	15	30	0.50	77.8	8.6
Wouro Himadou	1978	450	10	26	0.38	25.0	5.8
Sinthiou Dialiguel	1985*	272	21	27	0.78	0.0	10.0
Dialiguel	1978	281	24	35	0.69	6.3	12.5
Djimbé	1978	393	27	55	0.49	59.3	14.0
Sinthiou Débékhouié	1978	273	41	33	1.24	0.0	12.1
Sébou	1977	426	34	144	0.24	0.0	33.8
Gangala	1985	n.a.	19	64	0.30	100.0	n.a.
TOTAL/Average		4245	288	954	0.30	27.5	22.5

* These are newly constructed perimeters replacing earlier ones.

Alahina has not yet begun to operate.

Sources: Same as previous table.

II. Results of the Perimeter Census

Table 3 lists the perimeters for which it was possible to conduct the census. Fourteen of the twenty-one perimeters in Soninké villages (with Gassambilakhé Nouveau treated as a separate, fifteenth groupement because SAED treats it separately) and twelve of the thirteen perimeters in Toucouleur villages provided the information. The principal reason for missing information for the Soninké perimeters is the refusal on the part of the Fédération des Paysans Organisés de Bakel (the Federation) to approve the research. Extended negotiations with the President of the Federation, Diabé Sow, led to our being told that we were to present ourselves as independent researchers who had not received Fédération acceptance; we told each groupement this, and several (Diawara I, Yellingara, Koungany and Yafera) decided not to meet with us. The information on Diawara II is missing because we have not yet been able to get a perimeter listing; the groupement has otherwise been cooperative. We did not approach Koungani Marabout or Aroudou Emigrés. Among the Toucouleur perimeters, only Kidira is missing; we did not visit the groupement because it has been inactive for some time.

Also shown in Table 3 are the number of members and number of family heads in each perimeter (for the Soninké only; Toucouleur family structure is generally simpler, with most families following a nuclear pattern and, as we will show below, women are rarely members). These are combined to yield the column showing average number of members per family head. The purpose of calculating this ratio is to demonstrate differences in the type of participation in irrigation from village to village. It is striking how much the ratio varies. Three perimeters (Moudery II and III and Gassambilakhé nouveau) have ratios close to one, because plots on those perimeters were allocated one to a family. Others with low ratios are Tuabou, for reasons to be explored by Monica Sella in Bakel Discussion Paper no. 8, and Bakel Collengal, where membership of the groupement is composed of individuals rather than families. At the other extreme, both groupements in Ballou have very large numbers of members per family head, and Golmi, which is unique in many ways (see Bakel Discussion Paper no. 5), has an average family size of 17.

These differences in the form of participation are important because irrigation requires a good deal of labor, and the incorporation of large numbers of family members in the groupement may help farmers to guarantee enough labor to farm their holdings successfully. It certainly has been true that Ballou is one of the most successful villages, and that Tuabou is one of the least.

Table 4 gives a breakdown of membership by caste. The most noteworthy observation to be made about these numbers is that former slaves (Komé plus Jaagarafu) comprise nearly half of the membership of the Soninké perimeters (45%), and the traditional nobility about the same (Xooré plus Moodi, a total of 46%). It is clear that the BSIP project has done an impressive job in giving formal rights to land to people who in the past only had access to farmland via their relationship with noble families. The situation varies considerably between perimeters, however. Ballou I is dominated by Xooré (430 of 476) and Golmy by Xooré and Moodi (141 of the 156 for which information is given), and several of the newer

TABLE 3

Number of Plottolders on Each Perimeter
Covered by the Census and
Number of Members per Family

A. Perimeters with Predominantly Soninké Membership

	<u>Number of Members</u>	<u>Number of Family Heads</u>	<u>Ratio mem- bers/family</u>
Gandé	89	43	2.1
Galladé	192	39	4.9
Moudery I	135	48	2.8
Moudery II	118	97	1.2
Moudery III	58	51	1.1
Moudery femmes	215	0	--
Manael	267	91	2.9
Tuabou	64	38	1.6
Gassambilakhé	288	77	3.7
Gassamb. Nouveau	61	60	1.0
Bakel-Collengal	539	339	1.6
Golmy	222	13	17.1
Aroundou	187	79	2.4
Ballou I	476	50	9.5
Ballou II	274	33	8.3
TOTAL*	2970	1058	2.8

B. Perimeters with Predominantly Toucouleur Membership

Sénoudébou	338	
Guitta	80	
Nayé	95	
Alahina	27	
Selling	30	(this information not available for Toucouleur perimeters)
Wouro Himadou	26	
Sinthou Dialiguel	27	
Dialiguel	34	
Djimbé	44	
Sinthiou Débékhoulé	33	
Sébou	144	
Gangala	64	
TOTAL	942	

GRAND TOTAL 4127**

* Excluding Moudery femmes, where there are no family heads.

** Including Moudery femmes.

NOTE: There is some double-counting, because farmers may be members of two (or more) perimeters. This is true notably in Moudery and Bakel, and probably in Diawara.

TABLE 4

Distribution of Perimeter Members by Caste:
Perimeters with Predominantly Soninké Membership

	<u>Xoore</u>	<u>Moodi</u>	<u>Mangue</u>	<u>Castes</u>	<u>Kome</u>	<u>Somono</u>	<u>Jaaga- rafu *</u>	<u>Misc.</u>	<u>Missing</u>	<u>TOTAL</u>
Gandé	40	0	0	1	26	1	6	15	0	89
Galladé	93	0	0	0	96	1	0	2	0	192
Moudery I	39	2	3	3	78	2	7	1	0	135
Moudery II	16	2	5	5	67	2	13	2	0	118
Moudery III	13	1	0	1	17	0	24	2	0	58
Moudery femmes	63	5	9	15	105	0	18	0	0	215
Manael	137	40	0	37	49	0	3	1	0	267
Tuabou	21	0	0	8	35	0	0	0	0	64
Gassambilakhé	54	3	0	8	220	1	0	2	0	288
Gassamb. Nouveau	5	1	0	1	51	0	0	3	0	61
Bakel-Collengal	110	14	0	16	379	12	0	8	0	539
Golmy	66	75	1	1	12	0	1	0	66	222
Aroundou	100	12	10	19	43	1	0	2	0	187
Ballou I	430	16	11	0	19	0	0	0	0	476
Ballou II	99	6	0	12	157	0	0	0	0	274
TOTAL	1286	177	39	127	1354	20	78	38	66	3185
(% of total)	40.4	5.6	1.2	4.0	42.5	0.6	2.5	1.2	2.0	100

* In villages other than Gandé, Manael and Golmy, our census showed these to be named kolyadio. All are descendants of slaves of a special type -- land administrators originally appointed as such by the Bacili of Tuabou. See Traoré's discussion in Bakel Discussion Paper no. 4.

perimeters (Moudery II, Collengal, and Ballou II) have a preponderance of Komé. Gassambilakhé, one of the original perimeters, also has a large percentage of Komé.

The "outliers" are best discussed individually. The schism which occurred in Ballou in 1985 was previously discussed in Bakel Discussion Paper no. 1. Nearly all the members of Ballou II were members of the original Ballou groupement, and left following a disputed election for the Presidency of the groupement. Statistically, it appears that most of the Komé departed, along with about one-fifth of the nobles. Yet the leadership of Ballou II is still noble, with its President being the former President of Ballou I. In any event, it is safe to say that the newer perimeter is predominantly Komé, whereas the original one has become predominantly noble.

Moudery II also was organized by people who left Moudery I, although the departure was gradual rather than precipitous. Here, however, a substantial portion of the leadership is non-noble, although the apparent real power is with a noble, who is also the President of the Rural Community. Collengal also drew a large proportion of its membership from an existing perimeter, Gassambilakhé, although in this case it was SAED which persuaded farmers to move -- apparently because it felt that there were better prospects for good returns to irrigation in Collengal.

Golmy is another special case. Originally, this perimeter was built, like Koungany Marabout, for the sole use of the Grand Marabout of Golmy and his family and disciples. But neighboring landholders, who farmed adjoining parcels, joined subsequently, had SAED extend the works, and brought their families into the perimeter. This is not a village groupement, because membership in the perimeter was restricted to the landowning families. It is thus an example of the reinforcement of traditional land rights rather than opening up of access to productive land to formerly dispossessed groups within the society.

In the predominantly Toucouleur perimeters, shown in Table 5, the noble Torodo, Ceddo and Peulh* have half of the membership of the groupements. This varies considerably from one village to the other, however. In Sénoudébou, Guitta, Alahina and Sinthiou Débékhoulé, descendants of slaves and casted people are in the majority, whereas the perimeters from Selling to Dialiguel plus Sébou have very few descendants of slaves. We do not have enough information at this time to interpret these wide differences; we expect that a future study under the Land Tenure Research Program will shed some light on this.

The overall conclusion is the same as for the Soninké perimeters: through the BSIP project, farmers from castes which do not have traditional direct rights to land have gained access to irrigated land to an unprecedented extent.

* The Peulh are considered distinct from the Toucouleur, although both groups speak Pulaar. The Peulh have sedentarized more recently, and maintain a stronger livestock economy to this day. They are all considered noble, with no significant internal caste distinctions.

TABLE 5

Distribution of Perimeter Members by Caste:
Perimeters with Predominantly Toucouleur Membership

	<u>Torodo</u>	<u>Peulh</u>	<u>Cubalo</u>	<u>Ceddo</u>	<u>Bailo</u>	<u>Castes</u>	<u>Captifs</u>	<u>Noble Soninke*</u>	<u>Other & Missing</u>	<u>TOTAL</u>
Sénoudébou	20	1	0	1	0	20	71	0	2	115*
Guitta	25	9	0	0	0	8	38	0	0	80
Nayé	41	10	6	1	6	19	11	0	1	95
Alahina	3	4	0	0	0	7	13	0	0	27
Selling	12	3	3	3	1	6	2	0	0	30
Wouro Himadou	10	8	0	2	0	2	4	0	0	26
Sinthou Dialiguel	14	7	0	0	1	3	2	0	0	27
Dialiguel	13	10	0	5	0	1	1	0	4	34
Djimbé	6	10	2	8	0	10	6	0	2	44
Sinthiou Débékhoulé	0	0	0	6	0	0	27	0	0	33
Sébou	0	142	0	0	0	0	0	0	2	144
Gangala	1	12	0	0	0	6	14	24	7	64
TOTAL	145	216	11	26	8	82	189	24	18	719*
(% of total)	20.2	30.0	1.5	3.6	1.1	11.4	26.3	3.4	2.5	100

* Excludes women members in Sénoudébou, for which data are incomplete.

As Table 6 shows, women are a majority of the membership on most of the Soninké perimeters, whereas they are a distinct minority on the Toucouleur perimeters, with the exception of Sénoudébou. In Bakel Discussion Paper no. 3, Marianne Bloch argues that this fact may help to explain the relative lack of success of the Toucouleur perimeters; the large amount of work needed for irrigation is difficult to mobilize without the use of female labor. The three exceptions, Sénoudébou, Sébou and Gangala, are unusual in other ways. Sénoudébou in fact allocates very small parcels (16 m²) to women, with substantially larger ones for men; women have been using the plots for vegetables and watering them by hand even when the perimeter is shut down. Sébou is almost entirely Peulh, and Gangala has a substantial proportion of Soninké in the membership -- all the females in the perimeter are in fact Soninké.

On the Soninké perimeters, there are several exceptions to the predominance of female membership: Moudery II, Tuabou, and Gassambilakhé Nouveau. These can best be explained individually. Moudery II was created by farmers who left Moudery I due to the stagnation of that perimeter; they determined that only heads of families, kagummu, would have rights to membership. Since the vast majority of family heads are male, this rule implied the virtual exclusion of women. This decision, by the way, gave a strong impulse to the formation of the women's group which eventually obtained land to form the Moudery Femmes perimeter. Gassambilakhé Nouveau's lack of women can be explained in the same manner -- the membership is entirely composed of family heads. In Tuabou, there is evidence that the small proportion of women is a result of the departure of many women, when irrigation experienced difficulties in the late 1970's (see Bakel Discussion Paper no. 8, forthcoming).

In the discussion of the data in Table 4, it was mentioned that some of the newer perimeters appear to have larger numbers of Komé than the older perimeters do. We demonstrate this systematically in Table 7, which divides the Soninké perimeters into two categories, the original perimeters established during the 1970's and the more recently created ones. The caste distribution is markedly different. Over half of the membership of the original perimeters is noble (xoore and moodi), compared to only one-fourth on the new perimeters; the share of former slaves is one-third on the former and three-fifths on the latter. The intermediate groups, Mangué, Castes and Somono, have roughly the same share of membership in the two categories. This suggests that the impulse to expand irrigation is disproportionately found among the former slaves, who have less access to flood-recession agriculture and therefore can benefit relatively more than nobles from irrigation.

This conclusion should be taken with some caution. As noted above, Ballou II is composed primarily of people who left Ballou I; they were members of the original groupement from the beginning. This is also true, to a lesser extent, of Moudery II and III, and all the members of Gassambilakhé Nouveau remain members of the original Gassambilakhé groupement, although the extent of their activity there is unknown. In the absence of comparable census information from the early years of the BSIP project we cannot make a definitive argument that new irrigators are primarily from the dispossessed castes. On the other hand, this shows that the latter group is exiting from the original perimeters to form new ones, perhaps as a declaration of independence from their traditional masters.

TABLE 6

Distribution of Perimeter Membership by Gender

A. Perimeters with Predominantly Soninké Membership

	<u>Number of Members</u>	<u>Number of Female Members</u>	<u>Percentage Females</u>
Gandé	89	50	56.2
Galladé	192	153	79.7
Moudery I	135	87	64.4
Moudery II	118	23	19.5
Moudery III	58	26	44.8
Moudery femmes	215	215	100
Manael	267	173	64.8
Tuabou	64	24	37.5
Gassambilakhé	288	210	72.9
Gassamb. Nouveau	61	0	0.0
Bakel-Collengal	539	279	51.8
Golmy	222	135	60.8
Aroundou	187	133	71.1
Ballou I	476	321	67.4
Ballou II	274	156	56.9
TOTAL	3185	1985	62.3

B. Perimeters with Predominantly Toucouleur Membership

Sénoudébou	338	223	66.0
Guitta	80	3	3.8
Nayé	95	0	0.0
Alahina	27	0	0.0
Selling	30	0	0.0
Wouro Himadou	26	0	0.0
Sinthou Dialiguel	27	0	0.0
Dialiguel	34	0	0.0
Djimbé	44	1	2.3
Sinthiou Débékhoulé	33	2	6.1
Sébou	144	61	42.4
Gangala	64	15	23.4
TOTAL	942	305	32.4

TABLE 7
Caste Structure on Recent vs. Old Perimeters

	<u>Xoore</u>	<u>Moodi</u>	<u>Mangue</u>	<u>Castes</u>	<u>Kome</u>	<u>Somono</u>	<u>Jaaga- rafu</u>	<u>Misc.</u>	<u>Missing</u>	<u>TOTAL</u>
Moudery II	16	2	5	5	67	2	19	2	0	118
Moudery III	13	1	0	1	17	0	24	2	0	58
Moudery femmes	63	5	9	15	105	0	18	0	0	215
Gassamb. Nouveau	5	1	0	1	51	0	0	3	0	61
Bakel-Collengal	110	14	0	16	379	12	0	8	0	539
Ballou IJ	99	6	0	12	157	0	0	0	0	274
Subtotal Recent	306	29	14	50	776	14	61	15	0	1265
TOTAL	1286	177	39	127	1354	20	78	38	66	3185
Subtotal Original	980	148	25	77	588	6	17	23	66	1920
% Recent	24.2	2.3	1.1	4.0	61.3	1.1	4.8	1.2	0	100
% Original*	52.8	8.0	1.3	4.1	31.6	0.3	0.8	1.1	*	100

* The percentage distribution on the original perimeters excludes the "missing" category. The missing are in Golmy, and are likely, given the perimeter's organization, to be nobles.

One way in which nobles have gained disproportionate access to perimeter land in the Soninké villages is by registering more members of their families in the groupements. As Table 8 shows, Xooré families have an average of 4.2 members per family, and Moodí 3.0, whereas other groups have substantially fewer. Komé, for example, have an average of 2.2 members per family, two full persons less than the Xooré. One important qualification to this conclusion is that noble families tend to be larger than those of subordinate castes, according to Pollet and Winter (1971) and Weigel (1982). Another qualification is that there is substantial inter-village variation in membership per family in all castes: Ballou, for example, has 9-10 members per family for Xooré and 6-8 for Komé, whereas Tuabou, for example, has fewer than 2 per family for Xooré and slightly more than 2 for Komé.

Table 9 gives another perspective on this observation: Xooré have a somewhat larger ratio of females to males than do the other Soninké groups. This might be seen as a greater degree of integration of women into modern farming among the nobles than elsewhere, but it is much more likely that the explanation is related to the one given in the preceding paragraph: nobles are more likely to be able to include the women of their families in the irrigation groupements because, given their control of the leadership of the perimeters, they have been able to take a disproportionate share of the total irrigated area.

Unfortunately, these conclusions must remain tentative. It has not been practical to conduct comprehensive village population censuses to compare the distribution of groupement membership by caste and gender with that of the entire population. This will, however, be possible for Moudery, where David Miller's forthcoming work will be based in part on a village population census.

TABLE 8

Distribution of Perimeter Members by Family and Caste: Perimeters with Predominantly Soninké Membersh
(First line is number of participants; second line is number of family heads

	<u>Xoore</u>	<u>Moodi</u>	<u>Mangue</u>	<u>Castes</u>	<u>Kome</u>	<u>Somono</u>	<u>Jaaga- rafu</u>	<u>Misc.</u>	<u>Missing</u>	<u>TOTAL</u>
Gandé	40	0	0	1	26	1	6	15	0	89
	13	0	0	1	14	0	6	9	0	43
Galladé	93	0	0	0	96	1	0	2	0	192
	18	0	0	0	19	1	0	1		39
Moudery I	39	2	3	3	78	2	7	1	0	135
	9	1	3	1	26	2	5	1	0	48
Moudery II	16	2	5	5	67	2	19	2	0	118
	10	1	5	4	63	2	10	2	0	97
Moudery III	13	1	0	1	17	0	24	2	0	58
	12	1	0	1	16	0	19	2	0	51
Moudery femmes	63	5	9	15	105	0	18	0	0	215
	(no family heads on the women's perimeter)									
Manael	137	40	0	37	49	0	3	1	0	267
	44	18	0	8	18	0	2	1	0	91
Tuabou	21	0	0	8	35	0	0	0	0	64
	17	0	0	5	16	0	0	0	0	38
Gassambilakhé	54	3	0	8	220	1	0	2	0	288
	10	1	0	5	60	0	0	1	0	77
Gassamb. Nouveau	5	1	0	1	51	0	0	3	0	61
	5	1	0	1	50	0	0	3	0	60
Bakel-Collengal	110	14	0	16	379	12	0	8	0	539
	62	13	0	12	235	10	0	7	0	339
Golmy	66	75	1	1	12	0	1	0	66	222
	2	7	0	0	2	0	0	0	3	13
Aroundou	100	12	10	19	43	1	0	2	0	187
	38	8	5	4	21	1	0	2	0	79
Ballou I	430	16	11	0	19	0	0	0	0	476
	42	4	1	0	3	0	0	0	0	50
Ballou II	99	6	0	12	157	0	0	0	0	274
	11	1	0	2	19	0	0	0	0	33
TOTAL*	1223	172	30	112	1249	20	60	38	66	2970
	292	57	14	44	561	16	42	27	3	1058
Average no. of Members/family	4.2	3.0	2.1	2.5	2.2	1.4	1.4	1.4	(22)	2.8

* Excluding Moudery femmes, where there are no "families."

TABLE 9

Distribution of Membership by Gender and Caste:
Totals of Perimeters with Predominantly Soninké Membership

<u>CASTE</u>	<u>Number of Females</u>	<u>Total Membership</u>	<u>Percentage of Females</u>
Xoore	856	1285	66.6
Moodi	79	177	44.6
Mangue	22	39	56.4
Castes	81	127	63.8
Kome	810	1355	59.8
Somono	10	20	50.0
Jaagarafu	37	76	48.7
Miscellaneous	15	38	39.5
Missing*	53	66	80.3
TOTAL	1963	3185	61.6

* The missing data are for Golmy, and the people are most likely nobles.

III. Conclusions

This report has analyzed the limited demographic information we have been able to obtain about the characteristics of the members of the BSIP groupements. The following observations can be made, subject to the qualifications presented above:

1. Landholding on the irrigated perimeters has reached all strata of society in both the Soninké and Toucouleur villages. This constitutes a great success for the project in giving access to productive farmland to groups whose access under traditional social arrangements was limited and conditional.
2. Women, who have always been important in traditional agriculture among the Soninké, have managed to remain important in modern agriculture. This contrasts to the experience of many parts of Africa, where women frequently lose access to land when irrigation arrives (for example, in the Jehaly-Pacharr scheme in The Gambia). Among the Toucouleur, the situation is quite different. Toucouleur women have not traditionally been involved in farming, and they are also generally not included in the irrigate perimeters.
3. Traditional elites appear to predominate on the original perimeters, whereas descendants of slaves and casted people are the majority on the perimeters created during the 1980's. This is partly due to the latter's departure from the original perimeters to form new groupements, but may also indicate a greater desire on their part than on the nobles' to expand their irrigated farming activity.
4. Traditional elites have registered larger numbers of family members as ploholders than have the other social groups. Given that the land on most perimeters was divided equally among registered members, this may have constituted a strategy to achieve a greater proportion of membership than they would otherwise have been able to achieve.

If data become available, future reports will compare the membership lists used in the census analyzed here with the situation at the origin of the perimeters and with the situation down the road, as new perimeters are formed and extensions of the old ones are made.