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Land Tenure and Rental in Western Sudan*

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Abstract

This paper reports on aspects of land tenure in western Sudan, especially the nature of tenure insecurity and the functioning of the land rental market. The active land rental market accounted for about one-third of cultivated land. Patterns of land rental transactions, and tests of the importance of insecurity in renting land, where the owner may not be able to reclaim land rented out, do not support the presumption that rental markets perform poorly. The role of the sheikh as administrator of village land, and the claims of large landowners to vast tracts, are, however, important political problems that must be resolved before attempts at 'rationalizing' land tenure.

1. Introduction

The salient and surprising feature of land tenure in Bireka¹, a small village in Sheikan district in western Sudan, is the extent of the land rental market, and the unproblematic nature of rental transactions. There seem to be few impediments to renting land. Consider the case of how Idris Hassan, a young Hausa farmer, went about renting land. His father had died the previous year, and he and his two other brothers tried to farm the plots which their father had rented. When they argued over who was bearing the burden of the work, Idris decided to acquire land on his own. For weeks he talked about how he would go and see El Dau Hussein, the wealthy son of a large landowner from a neighboring village. El Dau was the market clerk, and did not have time to farm all of his father's holdings. It was not until the beginning of July, well into the rainy season, that Idris paid him a visit. The two men reached a quick agreement to rent fifteen *mukhammas* (a *mukhammas* is roughly equivalent to one hectare) of fallow land. Payment would be LS 10 per *mukhammas* as advance money and a ten percent share at the end of the season. Idris then divided up the field, and distributed eleven *mukhammas* in plots of varying sizes to friends in the village, all good farmers. They would pay him the LS 10 advance charge, and he would give it to El Dau. Not only did Idris rent from El Dau without formalities, witnesses or elaborate rituals, but he also sub-leased to others.

The uncomplicated rental transaction between El Dau and Idris accords well with recent work that has warned against the idea that states in Africa should implement comprehensive land tenure programs to resolve problems of tenure insecurity. There are two reasons for this caution. First, indigenous tenure institutions appear to be capable of guaranteeing security and thus encouraging investment and the efficient allocation of land.² Second, the weakness of state and local bureaucracies means that implementation of reforms is likely to be ineffective.³ The conflicts that result from haphazard attempts at reform may increase, rather than decrease, insecurity.

This paper shows that analogous conditions and conclusions hold for Sheikan. This is not to claim that tenure in Sheikan is entirely problem-free. Farmers often speak of tenure insecurity as consisting of an imperfect ability to reclaim rented land. Poor or credit-constrained landowners might be afraid that if they rented land to more effective users they might lose their ownership rights. Many villagers who arrived after the initial founding of a village worry about accusations that the land they farm is really rented land, and can be taken away. This 'rental insecurity' might generate an efficiency loss from over-extensive cultivation and an under-investment in fallowing. It also bodes ill for the growing trend of investing in irrigated market gardens along the seasonal streams (*khur*); farmers may be discouraged from digging wells and planting trees if the land is going to be contested. But the magnitude of the inefficiencies created by rental insecurity may be small. The existence of a common rhetoric or perception of rental insecurity may not accurately reflect social practice. Indeed, the second part of the paper argues that unconstrained land rental transactions like that between Idris and El Dau are normal and frequent. Data indicate that the rental market is extensive, and a statistical test supports the hypothesis of a well-functioning market.

A considered approach to the problem of land tenure in Sheikan would weigh these possibly small inefficiencies against the costs of intervention. These are likely to be very high. The first part of this paper explores the discourses surrounding rental insecurity, and argues that ambiguous local and national interpretations and policies regarding the position of village sheikhs and other 'tribal' leaders, as both administrators of village land and owners of private land, are responsible for the persistence of insecurity.⁴ Land tenure and rental are deeply imbricated in fundamental political structures. Thus intervention in land tenure should proceed with caution for two reasons: the existing rental market performs adequately, and the political problems associated with resolving rental insecurity are not at all simple.

2. Land Tenure in Sheikan: 'System' and Contestation

Household compounds form the basic social units of Sheikan; no lineage groups organized by kinship corporately undertake significant economic or social activities. The sixty households of Bireka, for instance, are almost all nuclear or generationally extended families, with only five cases of households of brothers, and five female-headed households. The region is characterized by considerable ethnic heterogeneity. In Bireka villagers locate their residences along ethnic lines: Arabs (twenty households) are members of ethnic groups which consider themselves to be indigenous to the area; Burgo (thirteen households) are originally from Chad; Hausa and Bornu (twenty-five households) are from Nigeria. Other villages are similarly mixed, though single-ethnic villages are also common.

Households differ sharply in economic status, with the wealthy owning substantial assets (such as lorries, electric generators, bakeries, livestock, and small shops). Very poor households rely on daily earnings from the active wage labor market for subsistence. Almost all households pursue agricultural activities during the rainy season and wage labor, self-employment or trading activities during the off-season. For the most part, farmers hoe their fields with simple hand tools, and share the same basic production technology and crop varieties (sorghum, millet, sesame and groundnuts). Few modern inputs are used, and there is no animal traction and only occasional use of tractors. In the harsh environment crops fail frequently.

Land in Bireka and surrounding villages is fairly completely cultivated, but open expanses of uncleared land exist. Farmers have no difficulty articulating a 'system' of tenure that governs these two types of land. Areas of uncleared land are known as *ghifar*, and are administered by a village sheikh and his superiors in the hierarchy of traditional leadership, the *omda* (district leader), and *nazir* ('tribal head'). *Ghifar* land may be distributed to villagers, newcomers or residents of neighboring villages, and the sheikh may collect the *futra*, a ten percent harvest share. As long as he collects the *futra*, he retains 'ownership' rights, in trust for the village, 'against' outside acquisition of the land. Usufruct is, however, transferred to the

farmer and his descendants. This right is derived from the farmer having cleared the field, or 'opened' the land.

If the sheikh stops collecting the *futra*, then ownership rights are transferred to the farmer and his or her descendants. These 'rights' of ownership consist basically of not having to pay the *futra* in the future. If the current sheikh died, a new sheikh might claim that he was due rent on the land. The farmer would then claim that the previous sheikh had not collected rent, and so now he owned the land. So villagers will often distinguish land according to whether 'it belongs to them' (*haggahum*) or whether 'it belongs to them by ownership' (*haggahum milik*).

Not all farmers interpret the 'system' in the same way. One of the salient ambiguities of tenure in Sheikan concerns whether there is, in fact, any such thing as *ghifar* land. Many members of old families indigenous to the area claim ownership rights over *ghifar* land. They say they acquired these rights centuries ago during the time when power in Kordofan saw-sawed between the Funj kingdom in Sennar and the Sultanate of Darfur. The *omda* and his brothers in Bireka were reputed to own thousands of *mukhammas* in the uncultivated bush land between Bireka and the administrative center of Alloba to the south. These landowners claim they can rent out to other farmers without losing their usufruct rights if they collect a cash payment at the beginning of each season (*dugund⁵*, or *hag al shy*, lit. 'tea money'). That is, they can in theory reclaim land rented out.

This ambiguous legal status of *ghifar* land colors the relations among landowners and sheikhs and *omda*'s. Two Arab families who had moved from a village to the west of Bireka claimed that they owned hundreds of *mukhammas* there. They had authorized the sheikh of that village to collect *futra* and use it for village development; thus they believed they were maintaining their claims to the land.

Not every sheikh and *omda*, whose positions are legitimated in complex ways by principles of inheritance, Islamic rhetoric, and notions of good governance, accommodates the

claims of landowners. A case heard in the Sheikan district court in June of 1990 concerned a man who had left his village to live in the town of Um Ruwaba. In his absence, the sheikh appropriated and distributed 105 *mukhammas* of his land. The sheikh was collecting rent on this land; when the plaintiff returned he claimed the land, and the rent. The case was taken to the *omda*, who rejected it. Subsequently the old sheikh died, and a member of the plaintiff's family was made sheikh. The case was brought up again. The son of the old sheikh maintained that the land belonged to his father. Three witnesses for the plaintiff, including the new sheikh, however, claimed the contrary. The court postponed the case until the defendant produced his witnesses.

The technical point that complicates these cases is that cultivated land that has been abandoned through out-migration, or left unclaimed after a villager has died, reverts to the authority of the sheikh. In allocating this cleared land, the sheikh is also not subject to the same necessary transfer of usufruct rights engendered by the opening of previously uncultivated land. He too can collect a cash *dugundi* payment. He too can reclaim rented land.

One of the main reasons why landowners and sheikhs are increasingly interested in reclaiming rented land is that a land market is slowly developing. In Sheikan most people refuse to recognize a right to sell *goz* land, the sandy uplands that constitute the great bulk of village land, but since the drought of 1985 some farmers have sold plots along the seasonal watercourses where irrigated orchards and vegetable gardens have been established. And in neighboring districts people are buying land. Consider the following letter on file at the office of the *majlis*:

"We the complainants are the representatives of the residents of Abu Khureis village, who are 57 persons. We present to you our complaint against the sheikh. He has acted independently and sold 600 *mukhammas* to Fellata of El Obeid, despite our having formed a local committee to distribute this land to the village residents in 1986. But the distribution has not been carried out until now. And the sheikh insists that this land belongs to him by inheritance from his father. This land did not belong to his father; the land pertains to the villagers and we have been wronged by the sheikh's action. The *nazir* knows this. The

omda also knows that this land is not part of the inheritance of the sheikh. So we ask you to bring about justice."

Fifty-seven villagers signed the letter, all of them conscious of this major ambiguity in tenure: the sheikh is almost always both an owner of private land and an administrator of village *ghifar* land. This ambiguity leads to disputes between sheikhs and villagers.

An analogous case in the *majlis* files concerns a dispute in 1969 between the villagers of Berti and the leaders of the Bederiya tribe. The sheikh of the village, a Bederi, was distributing land he claimed was *ghifar* to members of his own tribe, even though villagers of other tribes were already farming the land. In his eyes, since they had not formally requested permission, or paid the *futra*, the land remained *ghifar* even though it was cleared. Government officials visited the village and formed a committee representing all the village tribes: Bederiya, Berti, Mima, Gura'an and dar Hamid. The committee was ordered to distribute the *ghifar* land, independently of the sheikh. The criterion was that land should be distributed to those who had little. Six years later the issue was still not resolved, and the regional commissioner was asked to implement the distribution.

In Bireka, the sheikh claimed ownership over parcels three times in the 1990 rainy season. Each time he asserted that those cultivating the land were renters and had not paid rent. In one case he had sold land to a man from El Obeid, who intended to cultivate a market garden. A woman who had left the village after her husband died claimed the land. She produced witnesses who testified that she and her family had farmed the area for 38 years. The court agreed with the plaintiff, and found that the sheikh had no right to appropriate the land. An appeals court supported the ruling. In a second dispute, the sheikh wished to sell a piece of land close to the river where an interested buyer wanted to establish an irrigated garden. The land had been farmed for at least 40 years by a Hausa family, who confidently predicted that were the sheikh try to sell the land he would find himself involved in a court case that he would lose. While the sheikh declined to press the matter, he was more vigorous in the third dispute,

trying to claim the land of a poor Arab farmer. He was however persuaded, after loud arguments and interventions by other villagers who feared an escalation of tense inter-ethnic relations in the village, to desist from his claims.

Idioms of land as gift and land as reward are used by these recent migrants and renters in making claims of ownership against landowners and sheikhs. Sheikhs supposedly gave out land in order to "settle" the country.⁶ Ahmed notes that, "a successful and fortunate *Nazir* would attract cultivations [sic] in his *Dar* [homeland]."⁷ Migrants from the far west of Sudan and beyond, who make up a considerable fraction of the population, legitimize their claims to land ownership, and security of tenure, with reference to their reward (land) for settling in a particular place rather than another. Popular rhetoric has it that if someone farms a plot for a given number of years (the number varies from speaker to speaker, but the most common number is three years) without paying rent, then the local court in Jaibat will decide in favor of the renter when settling an ownership dispute. (Both sides may bring witnesses willing to attest to the ownership.) "If it belonged to you," the court would ask the aggrieved landowner, "Why did you not collect rent?" Taking a troublemaking renter to court is costly, because the landowner must bring three witnesses to testify, and the trip to the court involves an entire day.⁸ These are the costs and risks that a landowner must face when considering renting out extra land.

Over the years, governments have attempted to resolve competing discourses of 'chiefly' ownership and 'cultivator' ownership. The British regarded the claims of 'overlords' as particularly problematic aspects of land tenure, sometimes supporting them when politically expedient, sometimes reinterpreting them as claims to dues rather than claims to ownership.⁹ Numerous state edicts- from the land ordinance of 1925 to the Unregistered Lands Act of 1970 and the Civil Transactions Act of 1984- have declared that unregistered land belongs to the state.¹⁰

The contested applicability of these laws at the village level creates uncertainty. Several extension agents from the Kordofan Forestry Department came to Bireka one day, and asked

the sheikh and *omda* for land along the *khur* to start a community forestry project. The *omda* agreed, and showed them a large area of uncultivated bush land that lay between the village and the *khur*. The land was prone to flooding, and the soil was heavy in clay, making it difficult to weed. Within three days of this tentative agreement, however, three older relatives of one of the poor Arab villagers had ridden to Bireka from their village several hours away, and met with the *omda*, arguing that their family owned the land. Even though they had no intention of using the land or developing it, the *omda* agreed with them, and informed the Forestry Department that there was no land available for the project.

State edicts have perhaps generated more uncertainty than they resolved for two reasons. First, the problematic dual capacity of local tribal leaders as both owners and administrators of land parallels the wider national-level ambiguity regarding the role of 'traditional' institutions in state structures.¹¹ The senior tribal authorities, the *nazir* and *omda*, have seen their formal authority wax and wane with the succession of regimes that have ruled Sudan since the Turkish invasion of 1821. The British elevated their status to one of formal authority during the period of Native Administration, but towards the latter half of colonial rule attempted to undermine them with rural councils. After independence some regimes found it convenient to allow traditional leaders to dominate the councils. The next two decades, however, saw a reversal of fortunes. The regime of Jaafar Nimeiri banned sheikhs and *omda*'s from rural councils, and stripped them of formal authority. The present regime has reversed the direction of policy, going back to the British and devolving tax authority and power to adjudicate local disputes and crimes. The sheikh and *omda* now have considerably more influence in local land tenure issues.

A second reason for the enduring influence of local leaders in land issues is that decisions regarding land are deeply imbricated with inter-ethnic politics. S. Berry has observed that people in many parts of Africa, "have asserted claims to rural land in order to establish or validate their membership in a social group or category- rather than vice versa."¹² Denying a

renter's claim that he or she owns the rented land, then, involves denying their membership in the community. Traditional leaders might use land holding, rather than village residence, as the criterion for membership in the community. Arab residents in Bireka, for instance, would say to the Hausa, in critical moments, "Do you have land here?" The implication was that the Arabs could evict the Hausa from their land and the village, should they be pushed. Hausa might sometimes say, "This is not my village; I am a stranger here because I have no land."

One of the first actions of the *omda*, after the new regime formally invested him with authority, was to prevent a wealthy Hausa farmer from investing in an irrigated garden along the *khur*. No one doubted that the Hausa man had farmed the field for more than four decades. Technically, the issue was whether the field had not originally been cleared by an Arab farmer, who had left the village shortly thereafter. If it had, then the land could be considered to have reverted to the sheikh, even though the Hausa man continued cultivating it without paying rent. The technical point justified the Arab leaders' involvement in the minor land dispute, and enabled them to insert the dispute into the underlying conflict among different ethnic constituencies. These political issues of membership in the village community explain why some villagers resisted state attempts to disempower tribal leaders.

Given these multiple and complex sources of tenure and rental insecurity, we might not expect the land rental market to perform very well. Landowners, especially those who are traditional leaders, might be very worried about their inability to reclaim land rented out. They might well prefer to hire wage labor and cultivate on their own account rather than rent out to other farmers. As noted above, this implies that there might be a misallocation of land, with farmers cultivating land extensively in order to retain their ownership and usufruct rights. Patterns of productivity indeed are consistent with models of farm-choices under conditions of rental insecurity and other market imperfections. Wealthier farmers in Sheikan usually obtain higher yields per hectare than do poorer farmers; they use more labor per hectare.¹³ This pattern of productivity is, however, also consistent with other models; when credit and insurance

markets perform poorly we might also expect to a positive relationship between wealth and productivity. We must examine land rental markets directly in order to determine whether they are responsible for the misallocation of land and labor.

3. Land Rental Markets in Sheikan

The rental market in Sheikan is very active. Table 1 presents data on land rental transactions in Bireka and for a sample of 116 household heads in six villages in the area around the market center of Jaibat. The data was collected by the author in the fall of 1990.¹⁴ The respondents are broken down according to household status of the farm 'manager' who controls the income and directs the activities. Male household heads control most fields, mobilizing family labor, especially that of unmarried sons. (Among the Hausa, married women are discouraged from working in agriculture.) Female household heads also cultivate family farms. Finally, married women and many unmarried women cultivate their own fields, using only their own labor, and working on Fridays and evenings (women's personal farms). Land rental accounted for a substantial proportion of land used in cultivation. A total of 122 out of 364 fields (34 percent) were rented by the Jaibat sample households. In terms of area, the total rented was also approximately thirty-three percent. For Bireka forty-two percent of the area planted was rented. More than sixty percent of male household heads rented at least one field.

Villagers did not confine their transactions to the boundaries of village land. In the Jaibat sample 250 out of 413 rented *mukhammas* were rented from other villages. Many renters travelled quite far for land, especially wealthier farmers who had more connections and desired to cultivate more land. Poorer farmers tended to rent within the village. A group from Bireka rented land almost four hour's walk south of the village.

There is evidence consistent with rental insecurity. In the Jaibat sample, sixty percent of fields rented had been rented for four years or less; only forty percent for longer than four years. In Bireka eighteen out of twenty-one renters had rented a new plot during the last seven years.

Fields were often cultivated for twenty to thirty years, so this relatively rapid turnover may be an indicator that landowners avoided situations where renters would occupy a single piece of land for a long time.¹⁵ Indeed, six renters in the Jaibat sample complained of incidents in the last year where landowners took land back.

But Table 2 provides an indication that on the whole the Sheikan rental market facilitated efficient and socially desirable adjustment (matching labor to land). Renters had more household labor and owned less land. The data from Bireka is striking in this regard; the ratio of land owned to labor for households renting out was higher than seven, that for households not renting was two and one-half, and that for households renting in was less than one and one-half. The order was reversed after households engaged in rental transactions, indicating considerable adjustment in the land market. The data is similar for Jaibat. Data on land rented out by each household were not collected, however, and so any households renting out were grouped with non-renters. Their ratio of land owned to household labor is higher than that of households renting in land.¹⁶

A more formal statistical test of market performance also supports the view of a well-functioning rental market. In their study of the Indian village of Palanpur, Bliss and Stern introduced an econometric approach to determining whether land rental patterns could be explained as adjustments to imperfections in markets for other factors of production.¹⁷ They postulated that farmers determined a notional 'desired cultivated area' *DCA* according to the amount of non-marketed inputs they possessed, namely family labor \hat{L} and bullocks B . These inputs would be idle or have extremely low marginal products if the household could not acquire land to match them.¹⁸ Farmers would attempt, to varying degrees of success, to make up the difference between desired area and owned area through the rental market. That is *NLI* (for 'net leased-in') could be expressed as:

$$NLI = [DCA(\hat{L}, B) - M],$$

where M is the area of land owned by the farmer. The parameter α reflects market imperfections in the rental market, such as rental insecurity or rigid prices caused by norms of fairness, both of which imply rationing and an imperfect matching of 'notional' demand with market allocations.

Bliss and Stern estimated a linear approximation:

$$NLI = c + \beta_1 L + \beta_2 B - \alpha M,$$

where β_1 and β_2 reflect how much the two non-marketed inputs affect the desired cultivated area, and c is a constant, and found that for their sample the estimate of the coefficient on owned area was -0.78 , not equal to minus one. As they put it, "the hypothesis that the choice of cultivated area is not influenced by the land area owned (perfect adjustment through leasing) is decisively rejected."¹⁹ Their two findings- that non-marketed factors explained land rental patterns and that the rental market could not completely compensate for imperfections in other factor markets- were corroborated by C. Pant and I. Nabi using data sets from the Semi-arid zones in India and from Pakistan, respectively.²⁰ R. Srivastava, however, found that household labor and bullocks explained very little of the variation in land rented in a sample from Uttar Pradesh.²¹ M. Taslim and F. Ahmed found that for one village in Bangladesh they could not reject the hypothesis of a 'perfect' rental market, while in another village the rental market was apparently imperfect.²²

We would like to apply this test of rental market performance to the data from Sheikan, but must resolve some differences between the environment in Sheikan and that of the Asian cases. In Sheikan there are no non-marketed inputs like bullocks, tractors, or irrigation equipment, since almost no modern inputs or techniques are used on the extensive agriculture that dominates the rural production system.²³ Since the farming system has not changed greatly over the past decades, there are no great variations in knowledge; additionally, very few of the adult farmers have had formal schooling. It is true that skills pertaining to the cultivation of specific fields, of the sort described by M. Rosenzweig and K. Wolpin, are by definition non-

marketed inputs.²⁴ We have no way of measuring these skills, but the extreme Semi-arid environment mutes the bias caused by omitting knowledge of field-specific idiosyncracies (by contrast with places where drainage and slope are significant). Land and labor, then, are the only relevant, measurable inputs.

Sheikan has reasonably well-functioning markets for labor. Wages are flexible, women constitute almost a third of the wage labor force, and children sometimes work with their parents on the fields of employers. Households adjust their land and labor endowments through the labor market, with labor abundant households hiring out labor and land abundant households hiring in labor. They will not fully adjust, however, because labor hiring must be financed before the harvest is realized, and there is no functioning credit market in the Sheikan area. Landowning households with little financial capital cannot borrow money to hire laborers; on the contrary, they must work as laborers to meet their subsistence needs during the four or five months of the agricultural season. Wealth, or liquidity, is the non-marketed 'input' that determines the demand for land, and we would expect assets to be a significant determinant of rental patterns, after controlling for household land and labor endowments.

We may derive an estimating equation from the farmer's maximization problem. The farm household chooses an amount of land to rent K and labor to hire L , constrained by the requirement that assets and access to credit A must be sufficient to meet a fixed subsistence requirement J and payments to hired labor (a household will not simultaneously be hiring labor and working outside the farm). The constraint is:

$$A - wL - J \geq 0,$$

where w is the wage rate. The problem for the farmer is then is to choose an amount of labor to hire and an amount of land to rent in:

$$\max F(M+K, \hat{L}+L) - rK - wL + \lambda (A - wL - J),$$

where λ is the Lagrange multiplier, r is the rental rate, and M and \hat{L} are the endowments of family land and labor.²⁵

Assuming all households are constrained (reasonable if the production function does not exhibit strong decreasing returns to scale) but not enough that they must hire out all of their labor, the first order conditions are:

$$F_K - r = 0$$

$$F_L - w(1+\alpha) = 0$$

$$A - wL - J = 0.$$

where F_i indicates the derivative of the production function. Straightforward manipulations reveal that:

$$\frac{\partial K}{\partial M} = -1, \quad \frac{\partial K}{\partial \hat{L}} > 0, \quad \frac{\partial K}{\partial A} > 0.$$

So in an equation,

$$NLI = c + \alpha_1 \hat{L} + \alpha_2 A + \alpha_3 M,$$

the test of imperfections in the rental market is again whether α_3 is different from minus one.²⁶

We estimate this equation using the data from Bireka. We cannot carry out the same regression analysis for the Jaibat sample because of an important measurement and truncation problem with the data. Land rented out by each household was not on the survey questionnaire, and so the measure of land-owned underestimates the actual land owned, and net land rented is truncated at zero- it does not include land rented out. While the truncation problem could conceivably be corrected, the measurement error of land owned will bias the coefficient away from minus one; households that rent out are incorrectly seen as cultivating only their own (mis-measured) land.

Before reporting the results, we should note that the Bireka data also suffers from formidable measurement error. Both land variables- owned and cultivated- are measured with error due to the absence of direct physical measures of the area. Villagers have well-defined notion of the *mukhammas*, using a standard size stick used to measure out an area to be

weeded when hiring labor, but the fields are very irregularly shaped, and it unlikely that anyone has every taken the time to directly measure their plots. The variable for household labor endowment is very approximate, and we have used two fairly crude dummy variables for wealth categories. Given all of these data constraints, it would be inappropriate to see this hypothesis test as anything more than a preliminary exercise.²⁷

Table 3 defines the variables included in the analysis, and shows their means for the various categories of participation in rental markets. In addition to variables measuring family labor endowment, household assets, children (representing necessary consumption expenditures), and land owned, we also include dummy variables for ethnicity and gender of household head. The Hausa in Bireka rented much more land than villagers from other ethnic groups. Twenty-one Hausa farmers (75% of the Hausa households) rented a total of 162 *mukhammas*, while only four Burgo and four Arab households rented in, for a total of only thirty-six *mukhammas*. This was to be expected, since the Hausa, as relatively recent settlers, owned little land in the village. But the Hausa rented only fifteen plots from landowners within the village, and thirty-two from outside, while all of the Arab and Burgo rentals were within the village. The Arab and Burgo landowners appeared much more likely to rent to farmers from the same ethnic group. We noted above the political competitions among ethnic groups that might restrict participation in rental markets.

Rental transactions were very much easier to carry out, apparently, when the transactors were male household heads. In the Jaibat sample sixty-one out of ninety-one male household heads rented land. Only four female headed households rented fields, and three of these households were landless. In Bireka no female household heads rented in land.²⁸

In a second specification we explore the possibility that rental patterns are influenced by the specific nature of a household's endowment of land- if we think of households as managing portfolios of agricultural activities, then endowments of soil types, locations, and fertilities should influence rental patterns. All other things equal, a household with only one type of land, in one

location, will be more desirous of renting land in other locations and of other types; the benefits from diversification may outweigh transactions costs and inertia.

The important result to note from Table 4 is that the estimated coefficient for land owned, TOTOWN, is not significantly different from minus one in any specification, confirming our earlier assessment of the rental market as functioning well. The dummy variable RICH is significant in all four specifications, attesting to importance of assets as a non-marketed input determining desired cultivation patterns- wealthy people rent in land instead of financing poor farmers because the transactions costs from lending money are too high. Household labor is significant in three of the specifications, and has a positive sign- indicating some imperfections in labor markets. The dummy variables for female headed households, and the ethnicity dummy variables, were insignificant. Gender and ethnic discrimination were apparently not binding constraints in the rental market.

The various measures of quality and dispersion of land endowments yield a mixed pattern of results. Specification (3) has OLDDIR#- the number of different locations of owned land- as significant but positive. We might have expected that the more dispersed owned land was, the less the farmer would benefit from renting. OLDST#, the number of soil types, is significant and with the correct sign. These variables appear sensitive to measurement- when recast in specification (4) in terms of the amount of land in particular locations or of particular qualities, they are not significant.

The data for the ten largest residuals of the basic specification (1) are presented in Table 5. The five cases where the equation underpredicts rental area are a diverse group. Cases 1 and 3 are poor Hausa men with large families. They also earned steady incomes from outside employment- one as a leather tanner the other as a market porter- and this income is not reflected in their assets. They were in a position to cultivate on a larger scale than other farmers. Case 45 was a poor Arab who typically cultivated optimistically- often leaving large areas unweeded. Case 67 is a man famous for never sleeping; the equation predicts he should

have rented out, but he worked day and night on his fields cultivating a large area. Case 79 is a very wealthy storeowner who cultivated vast tracts, by local standards. The RICH dummy variable was too small for him.

The cases with negative residuals share a common story. Cases 44, 69, 77 and 78 were all men busy with local political affairs or who had jobs outside the village and so did not have time to manage their agriculture. They rented less than predicted, or rented out much of their land. Case 5 is an old man whose sons also cultivated on their own account. Note that these exceptional cases were from all three ethnic groups, and of different economic categories. The rental market seemed to accommodate their specific needs reasonably well.

4. Conclusion

It might be appropriate to discuss briefly some issues of policy, even though the broad thrust of this paper is that there is no urgent need for tenure reform. Most policy discussions pose an opposition between private and corporate ownership. Neither of these two poles seems appropriate for Sheikan district. Formalizing and registering private rights to land could indeed mitigate the costs of most of rental disputes, and facilitate their resolution, by creating a centralized record of initial ownership and subsequent transactions. But the benefits of implementing such a register in western Sudan are probably small, while the costs are high. The benefits are small because usually village disputes are over boundaries and small plots on the borders of established fields. They create a lot of animus, but not necessarily losses in production.²⁹ Furthermore, tenure insecurity results primarily from the ambiguous position of village sheikhs and other 'tribal' leaders. This political component to tenure insecurity raises the costs of determining and formalizing the ownership of all fields. In any case, the rental market seems to function fairly efficiently.

The benefits and costs of corporate ownership are similarly ambiguous. In the case of disputes between villagers and nomads, and between sheikhs, it may be in the interest of the

villagers to maintain the legal fiction of 'village land'. The corporateness of the community is necessary when confronted with corporate land invasions. There is a bit of the classic coordination problem here- until other villages adopt private property, and until nomads are also allocated private ranches, it pays the villagers to act corporately when the land of a villager is encroached upon. Acting singly, they are vulnerable to being defeated by the superior resources of the 'corporate raiders'. Acting together, they are more able to resist.

D. Atwood has noted another benefit from formalizing corporate ownership: "a simple and well-publicized government decree declaring the validity of certain kinds of land claims or transactions may be much less costly, and as effective, as a major land titling program."³⁰ In the Côte d'Ivoire the government declared that renters from outside the village could not claim ownership over land. Previously farmers were unwilling to rent for fear that capitalists intent on establishing export-oriented production would claim the land.

There are problems with encouraging movement down the slippery road towards corporate ownership. As we noted, land and community are often intertwined with inter-ethnic politics. Involving national government officials and bureaucracies in these politics is a costly and uncertain business. A policy of supporting corporate ownership would also still leave unaddressed the fundamental issue of the role of the sheikh in administering village land.

The reasonable recommendation is to broaden the range of options away from the all-or-nothing policies of comprehensive registration or corporate ownership, and to adopt an incrementalist perspective. This first involves a research agenda that combines economic and social approaches. Indigenous tenure systems must be examined with care, in order to determine their flexibility and efficiency. The outcomes of rental and sales transactions must be weighed using some metric of social desirability; most often by the criterion of providing reasonable access. A growing literature suggests that in a great many cases indigenous institutions perform well. A second step is to develop alternatives to land registration. Researchers have noted the increasing use of informal local ownership affidavits and deeds.³¹

A policy of allowing local administrators to certify contracts for new land rental transactions might be appropriate. Restricting the certification of the contracts to situations where both parties agree to the contract would help keep the administrative costs of such a system to a minimum. Absence of a written contract would not be viewed, in the judicial and administrative system, as evidence of illegal occupation. Quite the contrary, it could equally be viewed as evidence of a spurious claim by the pseudo-landowner.

These incremental policies are likely to develop naturally from an interdisciplinary perspective on African land tenure. S. Berry has recently drawn a convincing picture of the actual variation, across the continent, in the relative influence of social versus market considerations in the allocation of land and labor.³² The extensiveness of the land market in western Sudan represents an important extreme, where land is not allocated primarily through social networks. Public policy and academic research framed in terms of markets is not necessarily irrelevant. But neither is it sufficient. As the discussion on tenure representations and rental insecurity makes clear, a number of fundamental social processes underlie land tenure in western Sudan, and the land rental market cannot be understood without reference to them. Future approaches to land tenure should combine the neoclassical emphasis on the relations between land rights, factor allocation, investment and credit, with an alternative socially-grounded exploration of land rights, community membership and local power relations.

Notes

*The villagers of Bireka (which is a fictitious name) were the primary contributors to the research project, and are heartily thanked. Leslie Gray collaborated on the survey and much of the fieldwork; this paper owes much to her contributions. Howard Stein provided very useful comments on an early version. Financial assistance from the Fulbright Collaborative Research Program and the Social Science Research Council is gratefully acknowledged. Many thanks to Ibrahim Abidallah, Ahmed Musa, and Al-Dau Mohamed for help in data collection, and the Western Sudan Agricultural Research Project in El Obeid for support and assistance.

1 . The name of the village has been changed.

2 . See Timothy Besley, "Property Rights and Investment Incentives: Theory and Microevidence from Ghana" mimeographed (Research Program in Development Studies, Princeton University, 1993); S. Migot-Adholla, P. Hazell, B. Blarel, and F. Place, "Indigenous Land Rights Systems in Sub-Saharan Africa: A Constraint on Productivity?" World Bank Economic Review 5, no. 1 (1991):155-75; Thomas Pinckney, and Peter Kimuyu, "Land Tenure Reform in East Africa: Good, Bad, or Unimportant?" Journal of the African Economies (1994); and Frank Place and Peter Hazell, "Productivity Effects of Indigenous Land Tenure Systems in Sub-Saharan Africa" American Journal of Agricultural Economics February 75, no. 1 (1993):10-19.

3 . See the papers in R. Downs and S. Reyna, eds., Land and Society in Contemporary Africa (Hanover, NH: University Press of New England, 1988) and Thomas Bassett and Donald Crummey, eds., Land in African Agrarian Systems (Madison: The University of Wisconsin Press, 1993). Also see David Atwood, "Land Registration in Africa: The Impact of Agricultural Production" World Development 18, no. 5 (May 1990): 659-671; Angelique Haugerud, "Land Tenure and Agrarian Change in Kenya" Africa 59, no. 1 (1989): 61-90; Raymond Noronha, "A Review of the Literature on Land Tenure Systems in Sub-Saharan Africa", Report No. ARU 43, World Bank, Washington, D.C. 1985; H.W.O. Okoth-Ogendo, "Some Issues of Theory in the Study of Tenure Relations in African Agriculture" Africa 59 (1989):6-17; and J. Bruce, "Land Tenure Issues in Project Design and Strategies for Agricultural Development in Sub-Saharan Africa", mimeographed (Madison: Land Tenure Center, University of Wisconsin, 1985).

4 . English has a difficult time translating local meanings of the Arabic words, *gabiila* and *jins*, which are the words local people use when talking about ethnicity, and must settle for the abused word 'tribe'. I will sometimes replace 'tribal' with 'traditional', without any intention of denying the active process of 'inventing' tradition.

5 . See Jay Spaulding, "Farmers, Herdsmen and the State in Rainland Sinnar" Journal of African History 20(3) (1979): 329-47. On p. 338 he notes exactly the same distinction in the historical sources: "This payment in compensation for clearing the land was called *dugundi* (or *tugundi*)... The farmer who received land in return for *dugundi* could not be disturbed in his cultivation until after the harvest, but then- in contrast to the tenant *da'man mazru'at* [secure cultivation]- his rights terminated unless the *dugundi* agreement were renewed."

6 . The word used is *amara*. For work on the history of tenure relations in the kingdom of Sennar, pre-colonial and colonial *dar* Hamar, and the sultanate of Darfur, respectively, see: Spaulding [note 18 above]; Mustafa Babiker Ahmed, "Agrarian Change in Dar Hamar: A Study in the Development of Export Crop Production and Desertification from Western Sudan" (Ph.D. dissertation, University of Hull, U.K., 1986); and George Michael La Rue, "The Hakura System: Land and Social Stratification in the Social and Economic History of the Sultanate of Dar Fur (Sudan), ca. 1785-1875" (Ph.D. dissertation, Boston University, 1989).

7 . Ahmed, p. 133.

8 . Witnesses are not always dependable. I attended several court session where witnesses, after taking the oath on the Koran, declared they had no pertinent knowledge about the case at hand.

9 . See A.R.C. Bolton, "Land Tenure in Agricultural Land in the Sudan" in Agriculture in the Sudan, ed., J.D. Tothill (London: Oxford University Press, 1948) pp. 187-197.

10 . For the legal aspects of the various land laws, see: M.H. Awad, "The Evolution of Landownership in Sudan" Middle East Journal 25 (1971): 212-28; S.M. El-Mahdi, "Some General Principles of Acquisition of Ownership and of Rights Over Land by Customary Prescription in the Sudan" Journal of African Law 20 (1976): 79-99; S. Rowton Simpson, Land Law and Registration (Cambridge: Cambridge University Press, 1976); and M. Runger, Land Law & Land Use Control in Western Sudan: The Case of Southern Darfur (London: Ithaca Press, 1987).

11 . For a general discussion see the papers in John Howell, Local Government and Politics in the Sudan (Khartoum: Khartoum University Press, 1974). For a interesting paper that describes the situation in Lesotho, where chiefs have maintained considerable formal authority over land allocation, see Steven Lawry, "Transactions in Cropland Held Under Customary Tenure in Lesotho" in Bassett and Crummey, pp. 57-74.

12 . Berry, 1988, p. 67.

13 . See Michael Kevane, "Agrarian Structure and Agricultural Practice: Typology and Application to Western Sudan" American Journal of Agricultural Economics 78 (1996):236-245.

14 . Time and logistics prevented the taking of a truly random sample in the Jaibat villages. Village lists of household heads (male and female) were drawn up with the assistance of the sheikh and village committees, then an interval sample was taken to yield 25 household heads from each village or village cluster. Villages were not chosen randomly (though neither was there any selection criteria other than sufficient number of respondents- to that extent extremely small villages of less than 15 households that were not located next to large villages would have been excluded), and so strictly speaking the sample should not be taken as representative of the region.

15 . Anand Swamy has pointed out to me a study by S. Bhalla, who found that in states in India where tenancy legislation made ownership of rented land more uncertain, the incidence of 'tenant switching' was considerably higher. See Sheila Bhalla, "Changes in Acreage and Tenure Structure of Land Holdings in Haryana, 1962-72" Economic and Political Weekly 12, no. 13 (1977): A2-A15.

16 . These ratios converge even more when transactions in labor markets are factored in; the actual ratios of land to labor exhibit less dispersion. There is still, however, considerable variation- see Kevane, op.cit.

17 . Bliss and Stern [note 13 above].

18 . Understanding why there are no institutional arrangements for the transfer of bullock power could benefit from a comparative analysis, for instance with the Irish case where 'team' sharing of bullock power and labor was common. See R. Harris, "Theory

and Evidence: The Irish Stem Family and Field Data" Man 23 (1988): 435-52.

19 . Bliss and Stern, p. 155.

20 . C. Pant, "Tenancy and Family Resources: A Model and Some Empirical Analysis" Journal of Development Economics 12 (1983), 27-39; I. Nabi, "Rural Factor Market Imperfections and the Incidence of Tenancy in Agriculture" Oxford Economic Papers 37 (June 1985): 319-29.

21 . R. Srivastava, "Tenancy Contracts During Transition: A Study Based on Fieldwork in Uttar Pradesh" Journal of Peasant Studies 16 (1989), 539-95.

22 . M. Taslim and F. Ahmed, "An Analysis of Land Leasing in Bangladesh Agriculture" Economic Development and Cultural Change 40 (1992): 615-628.

23 . We are assuming, then, that households share the same production function. There were small irrigated gardens, some of which used diesel pumps, and there were a few tractors that turned the soil prior to planting in a relatively insignificant number of fields. The great majority of fields were cultivated with simple hand hoes and almost no chemical or organic inputs.

24 . M. Rosenzweig and K. Wolpin, "Specific Experience, Household Structure, and Intergenerational Transfers: Farm Family Land and Labor Arrangements in Developing Countries," Quarterly Journal of Economics 100 (1985): 961-988.

25 . Ideally we would want to model the rental rate as a share rent, in line with current practice in Sheikan. The problem with doing so is that a market with share contracts is not a 'price-taking' market. Instead farmers and landowners will enter into complex contracts specifying input use. The renter is not, in some sense, free to choose an amount of land to rent. The literature has yet to develop an appropriate translation of this sort of contract equilibrium into an econometric specification for assessing market performance.

26 . Note that a coefficient other than minus one is a necessary but not sufficient indicator of imperfections in the rental market. In situations where combinations of labor, credit or insurance markets are imperfect, the coefficient on land owned will also be different from minus one, since land owned will also affect the desired cultivated area. For instance, imperfections in risk and credit markets might also lead the large landowning household (which might be less averse to risk) to cultivate a larger area. The coefficient on land owned will reflect this differential risk aversion, even if rental markets are perfect.

27 . For an excellent discussion on the data limitations (in terms of implementing a test of market performance) of even a first-rate sample from Indonesia, see Dwayne Benjamin, "Household Composition, Labor Markets and Labor Demand: Testing for Separation in Agricultural Household Models" Econometrica 60 (1992): 287-322.

28. Women also articulated a different principle regulating the rental transaction, using the rubric of 'sisterhood'. A woman might say the transaction between women was not 'economic', not the same as that with a man; it was between 'sisters'. Some women household heads did rent land to men under the same terms and conditions as male landlords, and were equally willing to go to court and enforce their claims to land. One woman in Bireka, whose husband had left her to migrate to Khartoum, continued to claim her husband's land and rent it out to other villagers.

29 . That is, because the rental market works reasonably well in allocating land, labor is not idle or used in an inefficient manner. Data on yields per hectare reveal no differences between

renters and own-cultivators, though they are not disaggregated to a field-by-field basis. At this stage in the development of production technology there are no land improvements on the sandy *goz* soils that constitute the bulk of farmed and rented land, so neither are there any differences in investments in land improvements. Of course, rental insecurity may cause differences in fallowing and rotation patterns that affect productivity. These remain important topics for future research; for an introduction to the issues see Keiji Otsuka, Hiroyuki Chuma, and Yujiro Hayami "Land and Labor Contracts in Agrarian Economies: Theories and Facts" Journal of Economic Literature (December 1992).

30 . Atwood, p. 667.

31 . Examples are: Lawry, p. 68-70; Hans Binswanger, K. Deininger and Gershon Feder, "Power, Distortions, Revolt and Reform in Agricultural Land Relations" (Working Paper WPS 1164, Agricultural and Rural Development Department, The World Bank, 1993) esp. p. 66; and Ahmed [note 22 above], for an example of a sharecropping contract from the En Nahud area in Kordofan. For innovative historical studies of land tenure in small communities in northern Sudan using, among other sources, precisely these kinds of written documents concerning land transactions, see Jay Spaulding, "The Birth of an African Private Epistolography, Echo Island 1862-1901" Journal of African History 34 (1993): 115-141, and Anders Bjorkelo, "Landsale Contracts as Historical Sources" mimeographed (Dept. of History, University of Bergen, Norway, 1993).

32 . Berry, 1993 [note 6 above].

