

PARTIAL

Land Tenure, Access to Land, and Agricultural Development in Uganda

by

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Africanist scholars and African governments are caught in a land policy dilemma. Both neoclassical economic theory and Marxist theory assert that increased concentration of landholding is a precondition to development (Berry, 1988). Neoclassical economic theory demonstrates that, in a market economy, individuals who can use land more productively will bid land away from those whose uses are less valuable.^{1/} Increased production results from both increased productivity per acre from the change to users with higher managerial skill, and from possible economies of scale in production processes. Likewise, Marxist theory asserts that increased concentration of landholding is central to the formation of the capitalist class, through exploitation of displaced labor and increased use of capital in production (Berry, 1988).

Yet increasingly unequal distribution of landholding in agriculture without economic expansion in the non-farm sector means high unemployment, increasingly unequal income distribution, limited internal markets, slower economic growth and perhaps political instability. In the absence of economic growth in the non-agricultural sector, labor displaced from agriculture has no alternative source of employment. Many academics have raised the spectre of a large, unemployed, pauperized landless class in rural areas (Fleuret, 1988, p. 154; Bruce, 1988, p. 44).

The dilemma for policy is how to increase agricultural productivity and total output without also creating a landless class. It is this dilemma for policy that is examined in this paper: Can those farmers who can use land most productively gain access to land at the same time that the poor are guaranteed access to enough land to earn at least a subsistence income?

The land tenure system determines how easily farmers can obtain access to land to expand their operations and the degree to which the poor have access to land for subsistence production. Land tenure rules define the rights and duties of individuals with respect to each other in their use of property, the rules of access to land and the nature of specific rights such as use, transfer, inheritance, rental, or use as credit collateral. Tenure rules also determine the conditions under which individuals have no-right to land. In a market system no-right is the result of limited bidding power because of limited net worth or equity, credit access and/or ability to generate cash income from land.

In customary African systems, no-right was rare because customary systems generally guaranteed access to land through membership in a social, usually kinship, group (Bruce, 1988). Customary tenure rules were well adapted to conditions of plentiful land and scarce labor, guaranteeing that the scarce factor of production (labor) had access to as much complementary input (land) as needed. Farmers able to use more land, e.g. those with larger households or better farm management skills, had access to more land yet those with few resources were also guaranteed access to land and therefore at least a subsistence income.

These tenure rules may perform less well under conditions of plentiful labor but scarce land.^{2/} On the one hand, those farmers able to use land most productively may be denied access to more than is needed for subsistence income. On the other hand, the rules guaranteeing land access to the poorest households may weaken or be impossible to enforce as land becomes more scarce.

Under conditions of increasing land scarcity due to commercialization of agriculture and increasing population density, tenure rules evolved to increase individual rights at the expense of group rights in many African settings (Barrows and Roth). In many customary tenure systems, the holder of use rights in land did not hold exchange rights, or the exchange rights were circumscribed by conditions on the rules of transfer (e.g. pledging or loaning land) or the group within which use rights could be exchanged (e.g. within a clan). Typically, as customary systems become more individualized group control over the distribution of land among community members weakens. As individual rights in land expand, the effect on agricultural development and income distribution depends on who obtains access to land and who is excluded. In effect, tenure rules define who will capture the gains from technological change that increases per acre productivity, or the gains that accrue to holders of land as population growth increases the demand for food and other land products.

Thus, tenure rules are central to the land policy dilemma facing African governments. Land tenure rules define how individuals obtain access to land and are therefore central to the emergence of a commercial farming class. The same tenure rules also determine the extent to which the poor have access to land or are guaranteed the minimum land area necessary for survival.

The purpose of this paper is to examine the dilemma of African land policy in the context of two quite different land tenure systems in Buganda (see Map 1). The two land tenure systems exist in close proximity: the mailo system that provides individual title and registration, and a customary system based on descent group membership. The question is how these systems

perform in allowing progressive farmers access to more land and providing the poor enough land to earn a subsistence income.

CUSTOMARY AND MAILO TENURE

Customary Land Tenure

Prior to 1900, land tenure rules in Buganda gave individuals rights to land through either descent group membership, political position, or both. Usufruct was allocated by both clan heads and by chiefs who were appointed by the Kabaka (king) and could be removed or transferred at will (West, 1965). In the far distant past, the groups that eventually made up the Kingdom of Buganda apparently had land tenure systems in which land was controlled by clans and use rights allocated by descent group membership (Mukwaya, 1953). The rise of the hierarchical political Kingdom of Buganda superimposed a second set of land tenure rules. The Kabaka granted control over land to chiefs at several levels of the political hierarchy who could allocate usufruct and demand tribute in labor or produce from peasants. West (1972) notes that by the 1870's: "Political allegiance and clientship already carried as much weight as kinship ties; lineages had ceased to have much territorial or residential significance, for neither clans nor their constituent lineages lived together as groups" (p. 11).

Clan rights (obutaka) were vested in heads of clans and sub-clans who could reside on the land, use it themselves, allocate usufruct to others, and upon the head's death the rights were vested in the successor clan head. Individual peasants were allocated use of clan land, but kinship in Baganda land tenure was much less important than among other ethnic groups. Discussing clan lands, Mukwaya notes that "In no case does a claim cover one

continuous territory or a big number of contiguous villages" (1953, p. 8) and in most clan-controlled villages clansmen were in the minority. Natural population growth in the presence of other nearby clans served to fragment some of the clan lands. But more important was the hierarchical political system in which chiefs were frequently transferred from one part of the kingdom to another, often taking some of their kinsmen along in their rise in the political structure.

The Kabaka appointed the chiefs and assigned the land over which the chief might exercise administrative control. Rights granted chiefs were not inheritable so upon the chief's death both the office and the land reverted to the Kabaka for reassignment (West, 1965, p. 4). The political system was intensely competitive, and advantage accrued to those with large numbers of peasants under their jurisdiction. Yet peasants could move freely and frequently did so to better their condition. The result was competition among political leaders for peasant support: "Even the village headman tried to attract peasants to his community by giving them land to cultivate, for this was to his own benefit and that of his lord" (Richards, p. 57). Land was an instrument to attain social status and advance one's political career.

The individual peasant typically obtained land to farm (kibanja) through the political mechanism, if he lived in a village controlled by a political chief, but could also obtain land through clan membership if he lived in one of the villages controlled by clans. In either case, usufructuary rights were inheritable but not negotiable. The peasant was obligated to provide the clan head or chief with labor for roads or public works, military service, and chiefs were also due a payment in kind called "envujjo" (West, 1972, p. 13). A few individuals, usually high political officials, obtained

rights to small family-sized plots through a special type of land tenure (obwesengeze) that was based on a specific grant from the Kabaka (Mukwaya, 1953, p. 12). These rights were inheritable and carried with them no political duties, setting the stage for the more individualized mailo system. Finally, even the concept of selling rights in land was not unknown, evidenced by a few sales made by the Kabaka in the late 1890's (West, 1972, pp. 131-33).

The period prior to the introduction of mailo tenure was particularly chaotic. Between 1884 and 1900 there were four Kabakas, three civil wars and other disturbances (Mukwaya, 1953, p. 5). With each change, chiefs were removed or transferred and high political officials replaced, resulting in considerable movement of peasants who were following political leaders. The civil wars, in which various religious groups were driven into or out of different areas, also resulted in massive shifts of population. These disruptions further weakened the traditional system of clan rights in land.

Mailo Tenure

The Buganda Agreement of 1900 dealt largely with political and military issues but Article 15 fundamentally changed Baganda land tenure by creating a form of freehold tenure for political notables (West, 1972). Land was allocated in square mile blocks (hence the term mailo). A small amount (573 square miles) was given to the Kabaka and high officials (termed "official mailo"), 8,430 square miles were given to other political officials (termed "private mailo"), and less than 300 square miles were allocated in freehold to churches, the central government and non-Africans.

Over 4000 individuals received private mailo. Mailo could be bought and sold, inherited, given to others, but could not be alienated to non-Baganda.

The rights of peasants who occupied the land were not discussed in the agreements, but in general peasants continued to farm the lands as before. These cultivators became known as "mailo tenants" although the relationship between the mailo owner and mailo tenant was more political than economic, essentially a continuation of the pre-1900 relationship between chief and subject with respect to land.

Gradually the economic value of land became apparent to the mailo owners. The tribute of labor and goods due the overlord under the traditional system was gradually transformed into economic rent, to such a degree that in 1928 the Busuulu and Envuujo Law was enacted to protect tenants and fix absolute rents. As in the pre-1900 tenure system, tenants could not sell their land rights but the tenancy was inheritable. Legally, tenants could not be evicted unless: (1) the tenant abandoned the land; or (2) the mailo owner sold the land and the new owner could demonstrate he needed the land for his own agricultural use and no alternative land were available.

Security of tenure was very high for both owners and tenants on mailo land, although "...nevertheless a man felt more secure if he owns his land...." (Mukwaya, 1953). The establishment of virtual freehold rights on mailo land did not induce landowners to immediately make land investments. Richards (1973) notes that "The mailo system itself...did not result in the commercial use of land by its owners for a period of some 40 to 50 years...." (p. 297). Mukwaya (1953) noted that protection of tenant rights prevented owners from aggregating enough land to invest in machinery and capture economies of scale, yet prevented tenants from mortgaging land for credit for farm investment. West (1972) argued that laws that provided tenant security

denied land access to investor-purchasers with capital to invest, and that "...the mailo owner may regard his tenanted land more as a source of capital for other projects than as a field for investment in itself" (p. 85).

The mailo system in Uganda led to the emergence of a market in land. The original 4,000 mailo owners and parcels had increased to about 112,000 _____ and 160,000 parcels by 1967 (West, 1972, p. 196), and much of the increase has been attributed to sales to former tenants. The market was also historically important in the emergence of a class of commercial farmers. Mukwaya (1953) found that 85 percent of landholders surveyed in Busiro and Budda counties had purchased their land, accounting for 24 percent of the land area in the sample. Reasons for sale of land included raising capital for business ventures, house construction, automobile purchase and payment of school fees. Most buyers were not farm operators, but purchased land for investment and for social and political advantages. "The main reason why people bought land was to get the social and political advantages associated with landowning ...Here and there a man buys land to develop himself but the majority buy with the intention of becoming landlords" (pp. 36-37). Writing in 1973, Hougham noted that "In Buganda today one may discern strong social motivations behind the possession of land, despite 60 years during which it has been a saleable commodity and almost 50 years during which it has been utilized for cash crop production" (p. 125).

Yet the market in mailo has historically allowed land to be transferred to those with high-valued uses, as neoclassical economic theory would predict. A survey by Hougham (1973) showed that most commercial farmers acquired their land through purchase, usually with capital accumulated through nonfarm work or sale of cash crops. Fortt (1973) noted that many

tenants purchased land during 1930-1960, and that these land purchasers "...were eager to acquire the social and political advantages of landowning, and in this respect could be considered 'men of affairs' but they were also compelled, by the small size of their holdings, to grow cash crops in order to fulfil their monetary needs, and so were necessarily 'men of property' who had to pay attention to the economic value of their land" (p. 76). In the 1960's the market enabled highly educated Buganda in the commercial or governmental sector to spend their savings on land, leading to a new group of commercial farmers with technical knowledge, willingness to try new practices, and ability to extract assistance from government or commercial banking bureaucracies (Fortt, p. 84). Clearly, factors other than mailo tenure were critical in the emergence of commercial farming, such as favorable commodity prices and nonagricultural economic growth that provided capital for investment in commercial farming (Fortt, p. 84).

Public Land

Only about one-half the land in Buganda was included in the mailo system. Although on average the political notables selected land for the mailo system in the parts of Buganda with more favorable soils and rainfall, in many areas mailo land was interspersed with land that remained under customary tenure. The system of customary tenure evolved from the political and clan systems into a system of customary rights that are more individualized over generations of inheritances. A land market in customary holdings is well developed in some areas.

In 1969 the Public Lands Act reconfirmed customary rights in land, administered by traditional authorities. The Act provided that a holder of customary rights could apply to the Land Commission for a grant of leasehold,

but very few such leases were ever granted. More important, the Act protected the customary rights held by an individual by forbidding the granting of any lease to any other party if any part of the land were held under customary tenure. The Act abolished official mailo but left private mailo unchanged.

Land Reform Decree of 1975

In 1975, government issued the Land Reform Decree of 1975 (LRD), vesting title to all land in government, to be held in trust for the people. The Decree abolished all forms of mailo and freehold, transforming mailo owners into leasees of the state and mailo tenants into sub-leasees. More specifically, the mailo tenant became a sub-leasee-at-sufferance with respect to the former mailo owner, meaning that tenants became subject to involuntary eviction. The protection given customary holders by the Public Land Act was abolished, customary holders became leasees, and the Land Commission was given the authority to evict customary holders without their consent. Even more fundamental, customary holders were held to be "at sufferance" that is persons occupying the land without the express consent of the landowner (government). Mailo tenants and customary holders were guaranteed compensation if evicted, but both the eviction and compensation procedures proved open to abuse. Thus, the Decree abolished protection for mailo owners, mailo tenants and customary holders.

The Decree was not widely implemented due to political and military unrest and mailo owners, tenants, and customary holders continued to use land under much the same rules as applied prior to 1975. The only practical difference uncovered in this research was that, because the Decree abolished

envujjo and busuulu along with mailo, the former mailo tenants make no payment to the former mailo owners.

In this research the terms mailo owner, mailo tenant, and customary holder will be used even though legally such terms no longer have meaning. Similarly, the term "public land" will be used to denote land that was under customary tenure prior to the Land Reform Decree, and "mailo land" will be used to denote the land occupied by mailo owners or tenants. The term "mailo owner parcel" denotes mailo land farmed by the owner; "mailo tenancy land" denotes mailo land farmed by a mailo tenant.

METHODOLOGY

Buganda is ideally suited to explore the relationship between the rules of land tenure, development of commercial farming and the emergence of a landless class. Mailo ownership is akin to freehold tenure, customary tenure is similar to the evolved tenure systems in many other African nations and mailo tenancy is a unique tenure form that provides high levels of security and low or zero rent but does not confer freehold rights in land. The questions addressed by survey research in the mailo areas of Uganda were: (1) Under which tenure system are progressive farmers best able to acquire access to land to expand their farm operations? (2) Are the poor guaranteed access to enough land to earn a subsistence income?

The hypotheses were: (1) land in mailo ownership with no tenants should provide the most attractive and available option for farmers with high managerial ability seeking to gain access to land; land under customary tenure should be least likely to be available to the more progressive farmers; (2) the poor should have most access to land under customary

tenure, although mailo tenancy land may also provide the poor access through inheritance; the poor are least likely to have access to mailo land with no tenancy encumbrances. The empirical results proved surprising.

A sample survey was carried out in October-December, 1988 at two research sites selected such that at each site: (1) mailo land is adjacent to public land under customary tenure; (2) mailo land is farmed by both owners and tenants; (3) the land records office had enough intact records to identify mailo and customary holdings and obtain a list of rights-holders (regardless how dated the listing).

The two sites selected are typical of the southern and northern mailo regions: (1) the adjacent sub-counties of Ziobwe (mailo) and Bamunanika (public land) in Luwero District about 60 kilometers north of Kampala; and (2) the sub-counties of Kibinge (mailo) and Butenga (public land) in Masaka District about 140 kilometers southwest of Kampala. (Prior to 1969 some of the public land at the Luwero site had been official mailo). Within each research site sample mailo blocks (land survey units) were selected at random, Block 60 in Ziobwe and Block 277 in Kibinge. Within each block parcels were selected at random. Interviews were conducted with individuals owning or holding tenancies within those parcels. The process of sampling and interviewing was continued until at least 35 usable observations had been collected for each of the three tenure types at each site. Thus, the original sampling unit is a parcel and the interview was conducted with the individual who is using the land--a mailo owner farming land he owns, a mailo tenant farming land under mailo tenancy, or a customary holder farming public land. These individuals and their households may farm other parcels under other tenure arrangements. Absentee mailo owners are not included in the

sample; a parcel owned by an absentee mailo owner would be represented in the sample as a mailo tenancy parcel. However, not all mailo tenancy parcels are owned by absentee mailo owners. Local leaders at both sites were interviewed to obtain information and insights not easily obtained in a sample survey, such as cases of evictions or behavior of lending institutions.

In the analysis some hypotheses are tested by treating each parcel as a separate observation, others using household-level data combining several parcels a household might farm. It is valid to treat each parcel as a separate observation, because owners treat parcels under different tenure differently. For example, about one-half the households with parcels under different tenure types reported different levels of tenure security among the parcels, suggesting that farmers do distinguish among tenure types for parcels they farm. In the analysis it will be indicated whether parcel or household-level data are used.

RESULTS

General Overview of Sample Data

The survey included 114 households in Luwero District and 107 in Masaka District. In almost all cases the interview was conducted with the head of the household (104 in Luwero, 95 in Masaka). Most of the household heads were male (96 of 114 in Luwero, 97 of 107 in Masaka). The average age of the household head was 54.75 years in Luwero and 53.82 years in Masaka. Household size was slightly larger in Masaka, averaging 10.0 persons versus 8.5 persons in Luwero. The level of education of household heads was similar, averaging 5.4 years in Luwero and 4.7 years in Masaka.

A very large majority of household heads were employed most of the time on the farm: 81 of 114 (71 percent) in Luwero and 93 of 107 (87 percent) in Masaka. Off-farm income was scattered among several occupations, with government worker and trader/shopkeepers the most prevalent in Luwero (9 cases each) and government worker in Masaka (6 cases). Most households also had other adults (e.g. respondent's wife) spending most of their time working on the farm (103 of 114 households in Luwero, 85 of 107 households in Masaka).

Agricultural activities were the main source of cash income. Of 114 households in Luwero, 102 reported cash income from coffee and 67 indicated coffee as their most important cash income source; 51 reported cash income from sale of other crops and 24 households indicated that this was their most important source of cash income. Of 107 households in Masaka, 90 reported cash income from coffee and 76 indicated coffee as their most important cash income source; 78 reported cash income from other crops and 16 households indicated this was their most important source of cash income. Thus, sale of agricultural products was the most important source of cash income for most of the households in the sample: 91 of 114 households (79.8 percent) in Luwero and 92 of 107 households (86.0 percent) in Masaka.

In Luwero the 114 households had 83 parcels under mailo ownership, 44 parcels under mailo tenancy and 55 parcels under customary tenancy. In Masaka the 107 households had 53 parcels under mailo ownership, 51 parcels under mailo tenancy and 40 parcels under customary tenancy on public lands. In Luwero, 59 households had multiple parcels and 23 households had parcels under more than one type of tenure. In Masaka, 25 households had multiple parcels and 10 households had parcels under more than one type of tenure.

Table 1

General Characteristics of Sample
(household data unless noted)

	<u>Luwero</u>	<u>Masaka</u>
Number surveyed	114	107
Household heads interviewed	104	95
Household head male	96	97
Average age of head (years)	54.75	53.82
Average household size (persons)	8.5	10.0
Average number of adults	4.3	4.7
Average years education (head)	5.4	.7
Head works mostly on farm	81	93
Other adults work mostly on farm	103	85
Coffee most important cash income	67	76
Other crops most important cash income	24	16
Total number of parcels	182	144
Mailo ownership (parcels)	83	53
Mailo tenancy (parcels)	44	51
Customary tenure (parcels)	55	40
Households with multiple parcels	57	27
Households with multiple tenures	23	10
Average parcel size (acres)	11.04	9.89
Most important crop:		
banana (parcels)	88	113
coffee (parcels)	60	7
Second most important crop:		
beans (parcels)	24	26
coffee (parcels)	74	90
Cattle-owning households	41	18
Average number of cattle owned	1.56	1.50

Average parcel size was similar in the two areas: 11.04 acres in Luwero and 9.89 acres in Masaka. The range in parcel size was quite large, from 0.8 acres to 170 acres in Luwero and from 0.5 to 64 acres in Masaka, excluding one Masaka mailo owner with a 300 acre parcel. Most of the larger parcels were in mailo ownership and are most likely remanent of the larger mailo blocks allocated at the beginning of the century (see Mukaywa for examples). For example, in Luwero all parcels under mailo tenancy were less than 20 acres and only two parcels under customary tenure were above 20 acres. In

contrast, 20.9 percent of all parcels under mailo ownership (15 of 72 parcels) were over 20 acres. In Masaka, all parcels under customary tenancy were under 7.5 acres, only 4 parcels in mailo tenancy (of 51 total) were larger than 10 acres, while 54.7 percent of all parcels in mailo ownership (29 of 53 parcels) were over 10 acres.

Crops grown in the two areas are also very similar. In Luwero, the most important crop was banana on 88 parcels and coffee on 60 parcels. Coffee was the second most important crop on 74 parcels in Luwero. In Masaka banana was the most important crop on 113 of the 144 parcels and coffee was most important on only 7 parcels. However, coffee was the second most important crop on 90 parcels. In Luwero 41 of the 114 households owned cattle, compared to only 18 of 107 households in Masaka. In general, farming patterns are similar in the two research areas, but Masaka is relatively more specialized in banana and Luwero in coffee.

In both Luwero and Masaka average parcel size is higher for parcels farmed by mailo owners than those farmed by mailo tenants or customary holders and the differences are statistically significant (See Table 2).³ Although mailo ownership parcels are larger, average coffee acreage per parcel does not differ by tenure type. The result is that the proportion of land planted to coffee is lower for parcels under mailo ownership than under either mailo tenancy or customary tenancy. This difference may be accounted for by the fact that the number of adults available for farm labor is not greatly different among households under different tenure types. If labor constrains coffee cultivation then larger parcels under mailo ownership would not be associated with larger acreage planted to coffee.

Table 2

Land Use by Tenure Type: Luwero and Masaka
(parcel data)

	Mailo Owner	Mailo Tenancy	Customary Tenure
Number of parcels			
Luwero	83	44	55
Masaka	53	51	40
Average size of parcel (acres)			
Luwero	17.95	5.29	6.04 *
Masaka	19.25	6.11	2.54 *
Coffee acreage, average/parcel			
Luwero	1.08	1.05	1.06
Masaka	3.56	2.10	.89 *
Average coffee yields (bags/acre)			
Luwero	6.45	5.48	6.32
Masaka	8.37	6.90	5.87
Percent of land in coffee			
Luwero	12	22	24 *
Masaka	24	27	31

*Differences among tenure types significant at the .10 level.

Progressive Farmers Access to Land

Applying neoclassical economic theory to the process of agricultural economic development presents a fundamental problem of identifying those farmers (or farm households) able to use land most productively. In an exhaustive study with ample time, financial and human resources, it is possible to estimate marginal productivity of land for each farming household. But such a study is beyond the means of this, and most, research projects. An alternative is to use proxy variables to identify those who are likely to be able to use land most productively.

In this study, "progressive" farmers were identified using an index based on farming practices which: (1) are recommended by agricultural research and extension officials; and (2) require a minimum of capital or

labor to adopt. The term "innovators" might be more accurate in describing this group, or the more neutral term "adopters," because group membership is determined based on adoption of recommended farming practices.^{3/} The practices selected to identify "progressive" farmers were: pruning coffee with a saw, spraying crops for insects, using mulch or fertilizer and spacing crops. Pruning coffee with a small pruning saw instead of a machete or knife, spacing crops and using mulch require little or no labor or capital beyond the alternative practices. Spraying for insect control does not necessarily require purchase of a sprayer, but both spraying and use of fertilizer do require modest expenditures early in the cropping year. The index of "progressivity" may therefore be slightly biased toward households with higher income that allows early-season purchase of inputs, but such bias is likely to be quite small. The index is similar to that developed by Bowden and Moris (1969) in their study of progressive Baganda farmers.

Table 3

Components of Progressive Index:
Number and Percent of Respondents
(household data)

Practice	Luwero		Masaka	
	Number	Percent	Number	Percent
Prune coffee with a saw	68	55	4	4
Spray crops for insects	30	27	39	38
Use mulch	15	14	39	38
Use fertilizer	18	16	17	16
Space crops	80	75	22	21

Note: observations with missing data not counted in percentages

Each respondent indicated whether he/she used each of these practices. For each question, a "yes" response was assigned the value one, a "no" response a value zero. The "progressive index" is simply the sum of the responses to these questions on progressive farming practices, i.e. is equal to the number of "yes" responses to these questions on recommended farming practices. The progressive index can assume a value of zero to five. The index mean in Luwero is 2.79 and the mean in Masaka is 1.91. For some analysis it was useful to group respondents into two groups. Those with a progressivity index less than or equal to two were termed "not progressive" and those with an index value three or greater were termed "progressive."

Progressivity Index and Tenure. Most farmers in both the progressive and not-progressive categories received their major cash income from agriculture and there is no difference between the groups with respect to source of income. Progressive farmers have more acreage (Masaka only), more acres in coffee (Luwero only), a larger percentage of their land in coffee (Luwero only), and higher coffee yields (Masaka only). Ages of both groups are about the same. The progressive farmers can be characterized differently in Masaka and Luwero. In Masaka, compared to not-progressive farmers, progressive farmers have twice as much land, more parcels, are looking for land to expand their farms, and are "better" farmers in terms of coffee yields. In Luwero, progressive farmers have about the same amount of land as others but have acquired more parcels, are looking for more land to expand their operations, and seem to be more commercially-oriented with higher proportions of their land, and more acres, in coffee.

Characteristics of Progressive Farmers
(household data)

Characteristic	Luwero		Masaka	
	Prog.	Not Prog.	Prog.	Not Prog.
Number of households ^a	30	70	18	78
Age	52	56 *	54	54
Percent whose main source of income is agriculture	78.3	79.7	85.0	91.6
Average acres of coffee	1.3	0.8 *	2.80	2.18
Proportion of land in coffee	.24	.13 *	.34	.30
Average coffee yield (bags per acre)	5.5	6.5	9.6	6.7 *
Acres held	11.4	10.0	14.5	7.7 *
No. parcels held	2.5	2.1 *	2.7	1.5 *
Percent looking for more land	76	50 *	74	43 *
Average ease of land access (1=easy 5=hard)	3.07	2.91	2.89	3.00

^a Indexes could not be constructed for 14 households in Luwero and 11 in Masaka due to missing values for one or more of the variables in the index.

Access to Land. The data provide seemingly conflicting evidence on how tenure rules function to allow access to progressive farmers. At both sites, progressive farmers have more parcels than others, suggesting that, at least in the past, they have access to land to begin or expand their farm operations. Progressive farmers also have more acreage at both sites although the difference is statistically significant at the .10 level only in Masaka. Yet progressive farmers are more likely than others to be looking for more land to farm. The seeming inconsistency can be easily reconciled by nothing that in any cross-sectional analysis it is likely that those farmers labeled "progressive" are more likely to be looking for land than others. Progressive farmers find it as hard to acquire land as other farmers, according to responses to questions on the degree of difficulty in gaining

access to land for farming. In both a Chi-square test and a t-test on difference in group means, there was no statistically significant difference in ease of acquiring land between progressive farmers and others in both Luwero and Masaka. Therefore, it is reasonable to conclude that progressive farmers are able to gain access to land.

The key question for land policy is how these farmers gain access to land, and what type of tenure proves most flexible in adapting to the needs of these farmers. In Luwero, parcels held by customary holders were associated with the highest progressivity index; parcels held by mailo owners had the lowest index value. In Masaka mailo owners had the highest progressivity index and customary holders had the lowest index (see Table 5). In both cases differences in index means were statistically significant at the .10 level. In other words, in Masaka a progressive farmer is most likely to be found on land he owns under mailo tenure, but in Luwero the progressive farmer is most likely found on land under customary tenure and least likely to be a mailo owner. The Masaka results support the main hypothesis; the Luwero results are exactly the opposite.

Table 5

Mean Progressivity Index by Tenure Type
(parcel data)

<u>Location</u>	<u>Mailo Owner</u>	<u>Mailo Tenancy</u>	<u>Customary Tenure</u>
Luwero	2.57	2.60	3.61 *
Masaka	3.16	2.61	1.16 *

*Differences statistically significant at the .10 level.

The paradoxical results have several possible explanations. First, ease of acquisition of land in a particular tenure may vary by location. If progressive farmers have no inherent preference for a particular tenure type, the results may simply reflect differences between Masaka and Luwero in availability of land under different tenures. Second, the results may reflect historic land allocation patterns. It is possible that more progressive farmers acquired most of their land through inheritance or gift, and that farm management skills differ because of historic differences in the groups farming land under different tenure in the different locations. Data on how land was acquired may help distinguish between these two possible explanations.

Importantly, in both Luwero and Masaka, progressive farmers tend to acquire land through purchase. Using parcel level data, the average index of progressivity can be constructed for parcels acquired through inheritance or gift versus those acquired through purchase (see Table 6). Land that was acquired through purchase tends to be held by more progressive farmers, on average, than land acquired through inheritance or gift.

Table 6

Average Progressivity Index,
by Means Parcel Was Acquired
(parcel data)

Means of Acquisition	Average Progressive Index
LUWERO	*
Purchase	3.29
Inherit or Gift	2.77
MASAKA	*
Purchase	2.54
Inherit or Gift	1.94

*Differences statistically significant at the .10 level.

Similar conclusions emerge from analysis of means of acquisition by progressive farmers and others (see Table 7). In Masaka, it is clear that progressive farmers obtain land through purchase; 81 percent of all parcels held by progressive farmers were acquired through purchase. Yet in Masaka it seems that the land market is well-developed and the non-progressive households also acquired a majority of their parcels (73 percent) by purchase. In Luwero, in contrast, progressive farmers are much more active in the land market than others: 58 percent of all parcels held by progressive farmers were acquired through purchase, versus 37 percent of all parcels for non-progressive farmers.

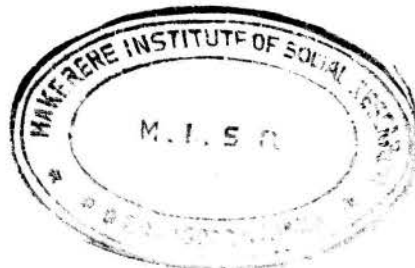


Table 7

Parcel Acquisition Method by Household Type
(number of parcels)

<u>Means of Acquisition</u>	<u>Progressive</u>	<u>Not Progressive</u>
LUWERO		
Purchase	29	39
Inherit or Gift	21	67
MASAKA		
Purchase	30	70
Inherit or Gift	7	26

*Differences statistically significant at the .10 level.

Examination of the means by which individual households acquire land strengthens the conclusion that the land market is particularly important for progressive farmers. In Masaka, of the 18 progressive farmers, 13 or 72 percent purchased all of their parcels and only one had not purchased any parcel. Of the "not progressive" group, 24 (31 percent) had inherited or been given all of their land. In Luwero, of 30 progressive farmers, 8 (27 percent) purchased all of their parcels and 9 (30 percent) had not purchased any of the parcels currently farmed. Of the 69 "not progressive" farmers, 15 (22 percent) had purchased all of their land but 42 (61 percent) had inherited or been given all of the land they farm. It appears that those farmers characterized as "progressive" are more active in the land market and, as a group, are more dependent on the market for acquiring land to farm.

// Land Tenure and Access. An important issue for land policy is whether the land tenure system facilitates transfer of land to those most likely to be able to increase its productivity. In the previous section, it was established that progressive farmers are generally able to gain access to land through purchase. The causal relationship, if any, between the type of

land tenure and the land market is less clear. Because the land laws in the early 1900's established a market in mailo land one might expect that land under mailo ownership would be most likely to have been acquired through purchase, and that land under customary tenure would be least likely to transfer through the market. In fact, this hypothesis is supported by the Masaka data, but in Luwero the land held by mailo owners is least likely to have been purchased while customary tenure land is most likely to have been acquired through the land market (see Table 8).

Table 8

Means of Acquisition of Land, by Tenure Type
(parcel data)

<u>Percent of parcels held in</u>	<u>Acquired through--</u>		
	<u>Purchase</u>	<u>Inheritance/Gift</u>	
LUWERO			*
mailo ownership	31.3	68.7	
mailo tenancy	40.9	59.1	
customary tenancy	52.7	47.3	
MASAKA			*
mailo ownership	90.6	9.4	
mailo tenancy	66.7	33.3	
customary tenancy	51.3	48.7	

*Differences statistically significant at the .10 level.

These results are consistent with those on land acquisition by progressive farmers. Progressive farmers tend to purchase land. In Luwero they hold customary land while in Masaka progressive farmers are more likely to own mailo land. In both areas mailo tenants are an intermediate group. It is not clear why progressive farmers tend to buy land under customary tenure in Luwero and mailo land in Masaka. It is possible that the land markets function quite differently in the two areas. It is also possible

that the supply of land to the market is influenced by individual characteristics not measured in this study which happen to be associated with tenure. The data collected in this research were not sufficient to determine whether, or why, the land market functions differently with respect to tenurial type in the two survey areas.

The results suggest that the land tenure rules do allow progressive farmers to gain access to land, often through the land market. For mailo parcels a land market has functioned for several decades, and previous research has noted the importance of the market in the rise of commercial farming (Hougham, 1973; Richards, 1973). The existence of a land market for parcels under customary tenure is less well-documented, but in both Luwero and Makaka it seems that much land, under all forms of tenure, changes hands through sale. The land market seems especially important to progressive farmers.

Poverty and Access to Land

The opposite horn of the land policy dilemma is access to land by those members of the society with little wealth or power. In traditional African tenure systems access to land for subsistence income was guaranteed by descent group membership. Under conditions of increasing land scarcity, individualization of tenure rules and the rise of a market in land, it is possible that a large class of landless peasants will be created while the non-farm economy is unable to absorb the labor forced out of agriculture. In Uganda, access to land by both the poor and the urban middle class was a critical ingredient in the survival strategy of many households during the steep decline of the non-farm economy from 1972-1986. Access to land by the poor provides income-earning opportunity in the absence of expansion in the

non-farm economy, and provides the poor a measure of economic security in societies without state-operated systems of social insurance.

Definition of Poverty. Poverty is typically defined with respect to annual household income. Ideally a household's well-being would be computed through some combination of its annual income and its accumulated wealth in cash, property, or other investments. But in African research the measurement of income is extremely difficult and accurate measurement depends on careful observation and interviewing over an extended period of time. Given the time and resource limits of the study it was not possible to obtain a precise measure of household income. Lacking a precise measure, poverty status was determined by a series of specific questions on ownership of a working radio, bicycle, whether the house wall was block, whether the household owned any cattle, and how frequently the household grows enough food to feed itself (most/every year versus some/very few years or never). In effect a series of proxy variables were used to reflect current income (food supply in kind), evidence of past income (bicycle, radio, house walls) and accumulated wealth in cattle. Responses indicating higher levels of income or wealth were assigned a value of one, the other assigned zero. A "poverty index" was constructed by summing the assigned values. The resulting index ranged from zero (extremely poor) to five (not poor). For part of the analysis the sample was divided into a group of "poor" households with a poverty index less than or equal to two, and a group of "not poor" households with a poverty index greater than or equal to three.

Characteristics of Poverty. The group classified as "poor" had different characteristics in Luwero and Masaka. In Luwero there is no

difference in average landholding by poor versus not-poor households. Poor households are older, have a lower proportion of land in coffee, have fewer parcels, but control as much land as the non-poor. In Masaka the poor are not significantly older than the non-poor but have, on average, one-half as many parcels, about one third as much land and about one-third as much coffee acreage. In both Luwero and Masaka the poor have a lower progressivity index than the non-poor.

Table 9

Characteristics of Poor Households
(household data)

Characteristic	Luwero		Masaka	
	Poor	Not Poor	Poor	Not Poor
Number of Households	55	57	52	49
Average coffee yield (bags per acre)	5.8	6.5	5.8	8.3
Proportion of land in coffee	.12	.21 *	.27	.31
Average acres of coffee	.85	1.17	1.08	3.06 *
Number of parcels	1.8	2.5 *	1.1	2.2 *
Average total acres	10.2	11.9	4.7	13.0 *
Age	59.6	51.4 *	55.0	51.8
Mean progressivity index	2.33	3.12 *	1.23	2.45 *

*Differences statistically significant at .10 level.

Tenure and Access to Land. Poor households are concentrated in the mailo owner group in Luwero and in the customary tenancy group in Masaka. This distribution exactly parallels the distribution of the progressivity index discussed in the previous section.

Table 10

Poverty Status by Tenure Type
(Number of Parcels)

Location	Mailo Owner	Mailo Tenancy	Customary Tenancy
LUWERO			*
Poor	56	30	24
Not Poor	24	13	30
Mean poverty index	2.60	2.58	3.33 *
MASAKA			*
Poor	8	22	26
Not Poor	40	25	13
Mean poverty index	3.52	2.51	1.79 *

*Differences statistically significant at .01 level.

The poor are more likely to gain land through inheritance or gift rather than purchase, compared to the not-poor.

Table 11

Means of Acquiring Land,
by Poverty Status of Household
(Number of Parcels)

Location	Poor	Not Poor
LUWERO		*
purchase	33	39
inherit/gift	77	28
MASAKA		*
purchase	33	61
inherit/gift	23	16

*Differences statistically significant at .10 level.



This is consistent with the data on tenure status and progressivity index presented above. It is also not surprising that the non-poor purchase land more frequently than the poor, since purchase requires relatively large amounts of savings or annual income. However, even the poor purchase a

majority of their parcels in Masaka, acquiring 59 percent of their parcels through the market.

One indicator of whether the poor have enough land to meet their needs is the percentage of households looking for land.^{4/} In general the poor are less active in looking for land than the non-poor (see Table 12). Nevertheless, over one-half of the poor households are looking for land, which suggests the possibility that a substantial number of households may not be able to meet minimum needs. In Masaka, 24 of 56 poor households (43 percent) were looking for more land to farm. Those poor households looking for more land have lower mean age of head (47.4 years versus 60.0 years) and more parcels (1.14 versus 1.03) although the difference in parcels is not statistically significant (see Table 13). No female-headed poor households (of 7) were looking for more land, even though this group had a low average age (46.6 years). It is likely that some of the poor are elderly people who do not wish to increase their farm activity, but the clear implication is that a group of non-elderly, male-headed, poor households may not be able to obtain access to more land to farm in the Masaka area.

Table 12

Percent of Households Looking for Land,
by Poverty Status

<u>Location</u>	<u>Looking</u> (percent)	<u>Not Looking</u>
LUWERO		*
poor	50.9	49.1
not poor	72.3	27.7
MASAKA		*
poor	42.9	57.1
not poor	64.1	35.9

*Differences statistically significant at .10 level.

CONCLUSIONS

In both study sites, Luwero and Masaka, both the customary and the mailo land tenure systems have adapted to changing conditions in providing access to land for both progressive farmers and the poor. In Luwero, progressive farmers typically acquire more land through purchase of parcels with customary tenure. In Masaka, progressive farmers expand their operation by becoming mailo owners through land purchase. The poor have access to land in both Luwero and Masaka although holding size for the poor in Masaka is quite small, and the study design does not provide evidence on the extent to which a landless class already exists in either location.

The land tenure system in both locations proved flexible enough to allow the development of a strong market for both mailo and customary tenure lands. Among progressive farmers, in Masaka 81 percent of all parcels were acquired through purchase; in Luwero 58 percent. Among the poor, the market was also a major means of acquiring land: in Masaka, 58.9 percent of the parcels held by poor households were acquired through purchase, and in Luwero 30 percent.

Yet precisely because the flexibility in land access results from a market in both mailo and customary land, any dramatic changes in the land market may greatly change the extent of access to land by both progressive and poor farmers. Access to land by both groups is dependent on the price of land, which in turn is a function of land supply and demand. The danger is that higher land prices will exclude those with little initial capital from access to the land needed to begin farming, or prevent those who can use land most productively from accumulating enough capital to expand their

Table 13

Characteristics of Poor Households
Looking and Not Looking for Land
(household data)

Characteristic	Luwero		Masaka		
	Look	Not Look	Look	Not Look	
Number of Households	25	30	21	31	
Average Age	55.2	59.9	47.4	60.0	*
Number of Parcels	1.48	1.47	1.14	1.03	
Female-headed (%)	29.4	70.6	0	100	
Male-headed (%)	51.6	48.4	49.0	51.0	*

*Differences statistically significant at the .10 level

In Luwero the poor seem less constrained in obtaining access to land. First, fewer poor than non-poor are looking for more land, as in Masaka. But the group of poor households looking for land is not significantly different from those who are not looking, in terms of average age or number of parcels. Like Masaka, female-headed households are much less likely to be looking for more land than male-headed households. In both Luwero and Masaka the poor have less land than those not poor, but the difference between the groups is small in Luwero and large in Masaka. In Masaka where the poor are concentrated among customary holders, the average size of holding for those households with only customary tenure land was 2.6 acres. The ability of the household to meet its food and cash needs from such a small holding must be questioned. Given the amount of subdivision that would normally occur at transfer of parcels to the next generation, it is likely that these households will not be able to continue to meet subsistence needs without substantial outmigration of labor from the area.

operations. Dramatic increases in the real price of land can result from either supply or demand factors in the market.

// A rapid increase in the demand for land might result from either increased population pressure or from political or economic instability. Uganda has one of the highest population growth rates in the world, estimated at over 3 percent per year. Some of the empirical differences between Masaka and Luwero can be partly explained by differences in population pressure on the land. In 1980, population per square kilometer of cultivable land was estimated at 52 in Luwero and 114 in Masaka (Kisamba-Mugerwa, et al., 1989). Parcel size is generally smaller in Masaka--45 percent of all parcels are under 4 acres versus only 21 percent of all parcels in Luwero. Land prices are also higher in Masaka. Although the land market is erratic, price depends on land quality, and farmers' estimates may contain a great element of personal judgement, both the sample survey and informal conversation with farmers revealed estimated land prices for a "typical" acre in Luwero at Sh 5000-9000, while in Masaka estimates were in the range of Sh 50,000 (Uganda shillings, Sh 145 = US\$ 1). In Masaka the pervasiveness of the land market, the high price of land, and the small holding size of poor households suggests that the next generation will have difficulty in establishing farming households out of the family's current holdings, especially on customary land, and may have difficulty amassing the savings needed to purchase enough land to provide for food self-sufficiency.

// A second source of dramatic increase in the price of land might arise from political or economic instability that leads individuals to purchase land to protect against rapid inflation, avoid the risk inherent in fixed-place investment in urban areas, avoid the risk of economic instability of

large businesses subject to government influence, or a myriad of other motives. Any increase in the profitability of agriculture relative to other forms of investment would also stimulate non-farm investors to purchase rural land, but income in the farming sector would also rise so the increased purchasing power of farm households would at least partly offset the land price increase.

A countervailing influence is the rate of growth in the non-farm sector of the economy. To the extent that non-farm economic development draws labor from the agricultural sector and provides non-agricultural investment opportunities, the demand for land will be less than otherwise. Urban/industrial economic growth and political stability would also make investment in farmland less attractive than otherwise. The future rate of growth in the non-farm economy depends partly on future political stability, government policy to stimulate the non-farm economy, and conditions in world commodity and financial markets.

The supply of land will also influence future prices. Unoccupied land is rare (or perhaps non-existent) in the two survey areas. Reliable data on the percent of arable land uncultivated are not available. From the sample survey, a reasonable estimate is that about 15 percent of the cultivable land in the Masaka area is not used, and the percentage is somewhat higher in Luwero. Yet this land may not be available to the market because it may be in fallow to restore fertility or simply unused because the household lacks the labor in that particular year. Government policy could assist in increasing land supply by imposing a land tax which would increase the cost of holding large parcels of land by households lacking the labor to engage in high-value but labor-using farming practices and cropping patterns.

Government policy can also increase the effective supply of land through research and extension services that increase land productivity, such as through development and introduction of high-yielding varieties of food or cash crops.

Changes in the major forces affecting land prices will greatly influence the ability of both progressive and poor farmers to gain access to land in the coming decades. In the meanwhile, the land tenure system will determine who has access to land under what conditions. Given the critical importance of the land market to both progressive and poor farmers, land law must either support the functioning of the land market or government must devise another means of allocating land to households. The current land law embodied in the Land Reform Decree exposes mailo tenants and customary holders to loss of land through the granting of leases to those able to manipulate the governmental bureaucratic system. Mailo owners risk loss of flexibility in land use through imposition of development conditions. If implemented and enforced the Decree could have a major negative impact on both poor and progressive farmers, through the land market. A functioning market depends on agreement among participants that the rights transferred through exchange will be socially sanctioned. Enforcement of the Decree could undercut the land market by removing the certainty that the use and exchange rights transferred will in fact belong to the purchaser. Most of those interviewed were unaware of the potential impact of the Decree, so it has probably not affected the market greatly.

An appropriate role for government policy is to support the evolution of these tenure systems and avoid disrupting the normal process of land allocation. For example, government policy might recognize the reality that,

for several decades, mailo owners have had virtual freehold rights in the land they farm. Likewise, the mailo tenant has come to have essentially freehold rights in his land. One tenure reform option is to recognize the existing state of these rights and give freehold title to both mailo owners and mailo tenants, on land they farm, confirming the existing state of evolution in land tenure practice. The land law might also recognize that, in places like Masaka and Luwero, customary tenure has evolved to closely resemble mailo (and freehold), so government might provide for a system to convert customary tenancy to freehold at the land user's request, or when land is transferred through sale to unrelated individuals.

In general, policy might encourage the evolution of land tenure and land use by formally recognizing arrangements developed over many decades as people adjusted customary tenure and the imposed mailo system to the demands and opportunities of an open market economy. Cautious reform that builds on the proven flexibility and success of the existing land tenure system is preferable to more drastic changes with less predictable consequences. Government officials and academics should be cautious in overturning a system that has met the challenge of the land policy dilemma.

References

- Anthony, Kenneth R. M., B.F. Johnston, W.O. Jones and V.C. Uchendu.
Agricultural Change in Tropical Africa, Cornell University Press,
 Ithaca, N.Y., 1979.
- Berry, Sara. "Concentration without Privatization? Some Consequences of
 Changing Patterns of Rural Land Control in Africa," in R.E. Downs and
 S.P. Reyna, eds., Land and Society in Africa, University Press of New
 England, Hanover, NH, 1988, pp. 53-75.
- Bowden, Edgar and Jon Moris. "Social Characteristics of Progressive Baganda
 Farmers." East African Journal of Rural Development, Vol. 2 No. 1,
 1969, pp. 56-62.
- Bruce, John W. "A Perspective on Indigenous Land Tenure Systems and Land
 Concentration," in R.E. Downs and S.P. Reyna, eds., Land and Society in
 Africa, University Press of New England, Hanover, NH, 1988, pp. 23-52.
- Fleuret, Anne. "Some Consequences of Tenure and Agrarian Reform in Taita,
 Kenya," in R.E. Downs and S.P. Reyna, eds., Land and Society in Africa,
 University Press of New England, Hanover, NH, 1988, pp. 136-158.
- Fortt, J.M. "Land Tenure and the Emergence of Large Scale Farming," in
 Richards, Audrey I., F. Sturrock, J.M. Fortt. Subsistence to Commercial
 Farming in Present-Day Buganda, University Press, Cambridge, 1973, pp.
 66-84.
- Hougham, D.A. "The Farms--Origin and Growth," in Richards, Audrey I., F.
 Sturrock, J.M. Fortt. Subsistence to Commercial Farming in Present-Day
 Buganda, University Press, Cambridge, 1973, pp. 124-149.

- Kisamba-Mugerwa, W., R. Barrows, E. Khiddu-Makubuya, E.S.K. Muwanga-Zake, M.G.K. Mayiga, C. Dickerman and S. Kayabwe, Land Tenure and Agricultural Development in Uganda, Makerere Institute for Social Research, Makerere University, Kampala, 1989.
- Mukwaya, A. B. Land Tenure in Buganda: Present Day Tendencies, East African Institute for Social Research, Eagle Press, Nairobi, 1953.
- Richards, Audrey I., F. Sturrock, J.M. Fortt. Subsistence to Commercial Farming in Present-Day Buganda, University Press, Cambridge, 1973.
- Richards, Audrey I. "The Traditional Administrative Structure and the Agricultural Development of Buganda," in Audrey I. Richards, F. Sturrock, J.M. Fortt. Subsistence to Commercial Farming in Present Day Buganda, University Press, Cambridge, 1973, pp. 47-65.
- West, Henry W. The Mailo System in Buganda, Government Printer, Entebbe, Uganda, 1965.
- West, H. W. Land Policy in Buganda, University Press, Cambridge, 1972.

Endnotes

- 1/ Even though neoclassical theory allows for differences in individual ability, and in fact many conclusions of theory are predicated on this differentiation, much economic research assumes that all peasant households are identical and that differences in output among households arise only because of different resource endowments. The model employed in this research is similar to that employed in the innovation adoption research, that change in the agricultural sector is caused by adoption of new practices, crops or systems by a few farmers seeking advantage in the economic or social system in which they operate. In neoclassical terms, these are the farmers with highest marginal productivity of land.

- 2/ Scarcity may be produced by relatively greater change in population than in land area and technology, or by increasing demand for land to take advantage of new market opportunities, or combinations.

- 3/ Innovators are not necessarily those able to use land most productively. Recommended practices might not be equally suited for adoption in all locations or on all farm parcels. Some recommended practices may be specific to particular crops and therefore eliminate farmers with alternative cropping patterns. In short, use of the term "progressive" does not necessarily mean that the farmer produces more, has higher skills, or can use land most productively; by definition, it simply means farmer adoption of certain practices. Whether the group of farmers defined as "progressive" differs from others in farm or household characteristics is an empirical question.

The index of "progressivity" is based on recommended practices that do not require large amounts of capital or labor. Inevitably, most farming practice requires some capital or labor, but the criteria for identifying progressive farmers should not be skewed to include only those with large capital or labor endowments. Progressive farmers may well use more capital or labor in their operations, but the proxy variables were chosen to make identification of progressive farmers independent of capital or labor endowments of the households.

See Anthony, et al., p. 156 for a discussion of the difficulty of using proxy variables to identify "progressive" farmers.

- 4/ The question asked was "Are you looking for more land to farm?" The response does not measure effective demand, i.e. demand backed by the ability to purchase. The data also exclude the "discouraged seeker," the individual who wants more land but is not looking because he lack the means to acquire land even if available.