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LTC PAPER 136

LTC Paper

LAND TENURE AND INVESTMENT IN AFRICAN AGRICULTURE: THEORY AND EVIDENCE

by

Richard Barrows and Michael Roth

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LAND TENURE CENTER

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CONTENTS

LAND TENURE AND INVESTMENT IN AFRICAN AGRICULTURE: THEORY AND EVIDENCE

by

Richard Barrows and Michael Roth*

Economists using a narrowly defined neoclassical economic model have derived the hypothesis (often treated as an empirically demonstrated proposition) that traditional African "communal" land tenure systems are inefficient when land has scarcity value (Johnson 1972). Individualized tenure, typically defined as demarcation and registration of freehold title, is viewed as superior to traditional tenure because individualization gives owners incentives to use land most efficiently and thereby maximize agriculture's contribution to social well-being. The view that traditional African tenure systems are inefficient implies that land tenure reform may be an important precondition to the economic development of agriculture, and that transformation of traditional tenure should be an objective of government policy.

The theoretical argument that traditional tenure systems are inefficient has great intuitive appeal to both academics and policymakers. Donor agencies such as the U.S. Agency for International Development and the World Bank have recently emphasized the transformation of African land tenure systems to promote individualized land tenure, defined here to include both freehold tenure with title registration and more general establishment of individual rights by land demarcation through survey. Several African nations, including Botswana, Ghana, Kenya, Somalia, Uganda, Zimbabwe, and others have laws establishing some form of individualized land tenure.

The purpose of this article is to use both economic theory and empirical evidence from scholarly studies to analyze the hypothesis that individualization of land tenure increases tenure security and agricultural investment. Two conclusions emerge. First, the economic theory used to analyze land tenure is an overly narrow application of economic principles. A broader theoretical perspective that uses some elements of institutional economics and the theory of imperfect markets provides more insight into the behavioral response to conversion of traditional tenure to an individualized system. Second, whether individualization is preferable to the evolving system of traditional tenure in attaining specific agricultural development objectives is an empirical

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question that cannot be resolved by theory alone. The effects of individualization are determined by the context in which the tenure policy is applied. Policymakers should consider alternatives to individualization, including policies that simply remove impediments to evolution of traditional systems.

Neoclassical Theory and African Land Tenure

Some economists have used the "property rights" paradigm based on neoclassical theory to argue that traditional African land tenure systems induce inefficient allocation of resources because property rights are not clearly defined, costs and rewards are not internalized and contracts are not legal or enforceable (Johnson 1972). Others use the same paradigm to argue that African tenure systems evolve in an economically efficient manner, if unimpeded by government policy (Ault and Rutman 1979).

Clear Definition of Rights

Johnson (1972) argues that efficiency requires a clear definition of rights, meaning that rights must be established and allocated to specific individuals or groups, must be easy to identify and verify, and must have legal and tenure certainty. The greater the ambiguity in property rights the higher the transaction costs in discovering the owner, in making and enforcing a lease or sale contract, and the higher the residual uncertainty remaining after any given expenditure to identify ownership. Transaction costs drive a wedge between the land's value of marginal product in the owner's use and the value of marginal product if used by the most productive alternative user. The marginal value of the land to the owner is the present value of the stream of net annual returns to the land in the owner's use. The value to the most productive user is the net present value of future returns in the more productive use, less the transaction costs of establishing ownership. As transaction costs increase and the wedge widens, the more productive user becomes unable to acquire land at the point where the marginal value to him (inclusive of transactions costs) falls below the marginal value product of the current owner. From society's view, the more productive user is prevented from obtaining the land, resulting in an inefficient allocation of resources.

High transaction costs for establishing ownership reduce the value of any fixed-place investment, regardless of who uses the land, and increase the cost of the investment. In addition, residual uncertainty even after attempts to confirm ownership increases the risk of not realizing future investment returns. This increased risk results in a higher discount rate for future years' returns, thereby reducing the net return to investment and investment volume. A higher discount rate due to uncertainty over ownership biases investment toward short-term projects.

Costs and Rewards Internalized

Johnson (1972) argues that under traditional tenure, all costs and benefits of individual action do not accrue to the decision-making unit, so that

social cost and benefit do not equal private cost and benefit. For example, on the assumption that grazing rights are strictly communal, the individual captures the economic benefits of his decisions to increase herd size but others bear most of the cost of range degradation. Or benefits of soil and water conservation are not captured by the individual because rights in land are either "communal" so that the benefit is consumed by all, or rights are uncertain so that the individual has no incentive to incur private costs to produce only social benefit. Johnson's conclusion is that ". . . land consumption, that is, leaving a land less productive than one found it, will be rampant" (Johnson 1972, p. 271).

Contracts

If the freedom to contract is inhibited, such as by restrictions on land transfer through a market, then investment is decreased through both a demand and a supply effect. In situations where individuals cannot sell land, the value of the investment to the farmer declines because of lost flexibility to convert, or higher costs of converting, a fixed-place asset into another asset form, although the annual income from the investment is unaffected (Johnson 1972). The lower value of investment to the farmer lowers the demand price for capital for agricultural investments due to a rise in the discount rate from the loss in liquidity. At the same time, the supply price of funds increases because the restriction on land sale lowers the collateral value of the parcel to the lender. The higher supply price of investment funds and the lower demand price result in lower investment under customary tenure than under individualized tenure.

By the same reasoning, individualization of tenure should encourage a market in land. Ault and Rutman (1979) speculate that creation of freehold title will reduce the transactions costs in land transfer, and that a market will emerge when land is scarce and the transactions costs of transfer are less than private benefits from exchange. Johnson (1972, p. 262) argues that restrictions on sale will create ". . . a divergence between the marginal value of land in the original owner's use and in others' use." A market in land will allow those with higher marginal value product to bid land away from others. Land will pass to those who can put it to its highest-valued use, eliminating the dead weight loss created by restrictions on land sales.

Evolution of Tenure Systems

Neoclassical theory has also been used to analyze the evolution of African land tenure systems. Ault and Rutman (1979) argue that the land tenure system in Africa has evolved according to the rules of economic efficiency. Under conditions of very low population density the supply of land exceeds the demand, even at zero price, so a tenure system based on use rights emerges. They argue that "[o]nce the demand for resources exceeded the supply at zero price, individual rights to property were exercised" (Ault and Rutman 1979, p. 181). This development is a reaction to changes in the socioeconomic environment: "[o]nce land becomes scarce, the African will exercise his individual rights when private benefits exceed transaction costs. To minimize these transaction costs, certain restrictions on the exercise of individual rights may continue

to be part of customary law but are not enforced in order to reduce transaction costs as economic conditions change" (Ault and Rutman 1979, p. 177). This evolution in land tenure rules is viewed as a rational response to change in the economic environment. Individuals are economically rational in their actions and the sum of individual action is evolution of institutions according to the rules of economic efficiency (Ault and Rutman 1979).

Theory and Hypotheses

The neoclassical model generates several specific hypotheses about economic behavior:

1. Individualization of land tenure (leasehold and freehold ownership) increases tenure security of the landholder, thereby reducing economic costs of litigation over land disputes.

2. Individualization increases investment by increasing tenure security and reducing transaction costs. Higher tenure security increases expected investment returns, thereby increasing the demand for capital (including credit) for fixed-place investment. The supply price of credit decreases because the cost of lending is reduced by improved credit worthiness of projects, and higher collateral value. Both supply and demand effects increase investment.

3. Individualization will cause a land market to emerge. Land will be transferred to those who are able to extract a higher value of product from the land as more productive users bid land away from less productive users.

The Empirical Evidence

Although no study has been designed to test the specific hypotheses derived from the neoclassical theory of African land tenure, scholars have produced empirical evidence that provides some important insights on both the potential and the limitations of the neoclassical theory. Empirical evidence from three countries--Kenya, Uganda, and Zimbabwe--supported by less comprehensive literature on land registration from elsewhere in Africa will be used to examine the above hypotheses. Almost all of the rigorous empirical work on individualization in Africa is from these three countries, each of which has enough history of individualized tenure to permit some generalizations.

Kenya

Kenya's land reform is the most extensive and widely studied of any country in Africa. Individual freehold tenure, following the Swynnerton plan of land consolidation and land registration, was introduced in the Kikuyu Reserves of Central Province in the 1950s during the Mau Mau Emergency. Most of the former African trust land in Central Province had been registered by the end

of the 1950s and nearly completed in Nyanza and Western Provinces by the mid-1970s. Land registration in the Eastern, Rift Valley, and Coast Provinces began at a later date. By the end of 1981, over 6 million hectares had been registered nationally (Odingo 1985).

Customary tenure was already undergoing individualization and change at least several decades prior to the land reform. Land scarcity resulting from population pressures was resulting in severe fragmentation of land holdings in the Kadianga sub-location (Coldham 1978), in some areas of Mbeere (Brokensha and Glazier 1973) and in Kisii (Wilson 1972a, 1972b). Land scarcity in some areas had lead to land overuse and erosion (Okoth-Ogendo 1976), and land had started to become a marketable commodity in land-scarce areas (Coldham 1978; Brokensha and Glazier 1973). Landholders in East Kadianga witnessed a higher incidence of land disputes and enclosure; it became common to fence holdings to protect crops from straying livestock (Coldham 1978). In areas such as Mbeere and Kisii, litigation over land disputes had become onerous and costly (Wilson 1972b). Brokensha and Glazier (1973), for instance, describe the costly and very tedious custom of the "blood oath" for determining land-right ownership among the Mbeere. A disintegration of the traditional legal procedures relying on this oath were partly the cause of the increased land disputes and tensions they observed among corporate groups.

While problems of land fragmentation, high litigation costs and land scarcity were gaining in importance, they were geographically concentrated. Okoth-Ogendo (1976) emphasizes that other areas of the country had no soil-erosion problems. And, while land fragmentation was severe in East Kadianga, where there was pressure on land, fragmentation was not a problem in East Koguta, where there was no great land shortage (Coldham 1978).

Land markets had existed in many areas as early as the 1930s, although as Brokensha and Glazier (1973) and Coldham (1978) point out sales were redeemable to the seller (head or representative of descent group) upon repayment of the original price. However, by the end of the colonial period irredeemable land purchases began to emerge and few clan boundaries were unequivocally accepted (Brokensha and Glazier 1973). This shift from clan rights to individual rights over land started among the Luo well before World War II (Coldham 1978). Sellers ironically were often those needing money for land litigation and to raise money for education. Buyers were "usually wealthy men such as chiefs, teachers, agricultural staff and other government officials" (Brokensha and Glazier 1973, pp. 192, 193).

As long as land was adequate in relation to needs, boundaries could be imprecise. However, as population growth and economic opportunities transformed land into a marketable commodity with value, clan leaders and individuals sought to extend their claims, usually by strenuous litigation (Brokensha and Glazier 1973). The Mbeere attributed this increase in litigation to increased population, cash-cropping, anticipated land reform, land sales, and "cleverness" of individuals to manipulate the customary litigation process. Whereas previously the people respected the decisions of the blood oath, individuals became adept at manipulating the process to their own advantage, especially the "educated" (Brokensha and Glazier 1973).

Both Wilson (1972b) and Brokensha and Glazier (1973) show increasing land litigation in Divisional African Courts prior to reform. Wilson calculates that over one-fifth of all landholders in Kisii district were involved in court cases over land prior to registration. Homan and Sands (1960) estimated that in 1955 an amount equivalent to one-fourth of the coffee production in Kisii was spent on land litigation in the courts, and that perhaps five times this amount went to witnesses and elders who arbitrated in disputes before the court stage was even reached.[1]

Coldham (1979) documented similar problems on the rangelands of the Masai in the late 1950s and early 1960s. An increasing number of outsiders were settling in areas of Masailand of high agricultural potential. Some of the more progressive Masai had started to enclose large areas of the best grazing land to form individual ranches. Without government intervention, ". . . tens of thousands of Masai and herds would have been forced into the driest, least fertile areas" (Coldham 1979, p. 621). In reference to these vast tracts of land being claimed, Okoth-Ogendo (1976, p. 177) adds that even before the 1968 Adjudication Act, "cultivation and residential occupation [had become] . . . acceptable means of acquiring land."

Various explanations have been offered for the rapid increase in land scarcity in pre-reform years: growing importance of the cash-crop economy, population growth, improved communication, and new market opportunities (Haugerud 1983; Coldham 1978). These factors affect the demand for land. However, Okoth-Ogendo (1976) argues that the colonial government's practice of placing land for Africans in "reserves" with fixed ethnic boundaries decreased the supply of land for African agriculturalists, exacerbating problems of land scarcity.

Ethnic factors to some extent influenced the differences in land sales, inheritance patterns, land fragmentation, clan versus individual control over land allocation and use, litigation, resource management, and conservation among regions. European settlement and the placement of Kenyans, particularly Kikuyus, in reserves was another important factor related to the ethnic influence. Colonial policies had slowly usurped African lands for European settlement and destroyed the traditional balance between African land use patterns and their environment (Harbeson 1971; Okoth-Ogendo 1976). Areas taken by the Europeans had for the most part been Kikuyu, and the movement of Kikuyus into reserve areas to some extent led to the problems of acute land scarcity, declining fertility, land fragmentation, and breakdown of customary structures that were cited by colonial administrators as the reasons for undertaking land consolidation and individualization. The threat of the Mau Mau movement and the declaration of the Emergency provided added urgency for implementing the reforms, which colonial administrators saw as the means to strengthen Kikuyu support for the administration (Sorrenson 1967).

Colonial administrators believed that land consolidation and registration by adjudication would help: create a stable African middle class, increase security of tenure, reduce costs of litigation, encourage agricultural investment, enable title to be used for credit, encourage development of a land market, control land transfers to ensure an economic size of land holding, and control fragmentation resulting from inheritance (Coldham 1978; Haugerud 1983;

Okoth-Ogendo 1976; Wilson 1972b). Meanwhile, customary law was seen as an obstacle to agricultural development; after all, it had been tapped as the culprit for land fragmentation (Coldham 1978).

Security of Tenure. With the land reform, any pending disputes were to be resolved at the time of adjudication. Wilson (1972b) reports that land litigation in African courts in Kisii district declined from an average of 1,068 in 1961-63 to 337 by 1965-67 following registration. In his interviews with registered proprietors, he writes that ". . . purchasers were keen to have transactions registered to avoid the land disputes over additional holdings acquired." Three quarters of the registered proprietors interviewed in his Kisii sample believed that registration increased their security of tenure (Wilson 1972b, p. 23). But, none of the coproprietors with jointly registered holdings felt more secure, largely because of disputes amongst themselves.

In Odingo's (1985) study of the densely populated Machakos area, 98.4 percent of the farmers who had obtained land titles had no recent serious litigations. However, disputes continued to be a problem in his other two study areas (Kericho and Nakuru) where population densities were lower, but at least in Nakuru, the population was more recently settled with a high rate of immigration from other provinces. In Machakos, there had been a rush to acquire legal title, but farmers showed less enthusiasm for registration in the other two study sites. Odingo (1985, p. 78) concludes, "[u]nder conditions where there is an absence of land pressure . . . there is no rush by farmers to acquire title."

Brokensha and Glazier (1973, p. 200) observed a "high correlation between economic advance (high cash crop income, fair communications, good soil) and desire for individual ownership." However, they also observed considerable tenure insecurity resulting from land consolidation and registration. Some Mbeere feared ". . . that a few powerful groups [would] . . . gain most of the land . . . excluding people from other clans" (Brokensha and Glazier 1973, p. 205). Also, the Mbeere rely on multiple holdings under different ecological settings to disperse production risk. Consolidation under the rubric of one household/one parcel created uncertainties whether landholders would have the same equivalent land units after registration as before. Disputes intensified. "During the period 1959-71 the anticipation of land consolidation spurred the bringing of cases, intensified their bitterness, and resulted in refusals to accept judgments as individuals came to look to the future external agency of the land demarcation officer to settle conflicts" (Brokensha and Glazier 1973, p. 199).

Coldham (1978, 1979) documents the confusion that was inherent in changing customary to individualized tenure in Kenya. He notes that ". . . even in those areas where land is registered, customary law in fact continues to govern the way in which most people deal with their land," making tenure rights ambiguous (Coldham 1978, p. 111). The land law failed to gain popular understanding or acceptance, individuals continued to convey rights to land according to customary law, and a gap developed between the control of rights as reflected in the land register and control of land rights as recognized by most local communities.

Legislation under the Land Act did provide a clearer definition of land rights (Coldham 1979). But it is also apparent that the difficulty of sorting out and recording the complex set of rights associated with a parcel in the land adjudication process resulted in the exclusion of certain right holders in practice. Coldham (1978, p. 98) states that ". . . owing to the problems involved in the adequate definition and protection of customary land rights, land adjudication often has the effect of depriving some people of their rights while conferring on others greater rights than they are entitled under customary law."

Okoth-Ogendo (1976, p. 177) argues that the ". . . very narrow view taken of land rights in the statutes made it virtually impossible to bring to the adjudication register all the multiple rights claimable under customary law." Four classes of rightful land holders lost land as part of land adjudication: (1) Mau Mau suspects in Central Province; (2) muhoi and jadak tenants; (3) landholders absent when adjudication was in progress; and (4) married sons or wives, since land was generally adjudicated in the name of the family head (Wilson 1972b; Coldham 1978).

Haugerud (1983) adds a fifth category, those who lost land to chiefs, headmen, clan elders, and other influential persons during the colonial period. "Individuals who had accumulated large holdings before land reform used government positions, political power, and earlier and better knowledge of the land reform procedures to acquire larger registered holdings during the reform process" (Haugerud 1983, p. 78). This process of title resulting in a redistribution of land has also been observed by Koehn (1983, 1984) in Nigeria, and Cobb et al. (1980) in Liberia.[2] Thus, registration effectively provided a mechanism for transfer of wealth to those with better social or economic position, thereby creating tenure insecurity for less influential right-holders.

The alienation of family members from their rights to land under customary law has been one of the harshest criticisms of the land reform (Haugerud 1983; Pala 1980). Haugerud (1983, p. 73) writes that "since only the possessor of a registered title had the right to sell land or to apply loan charges to it using the title deed as security, the way was left open for often lethal disputes within families." New rights of the title holder to sell or mortgage land, and thus the power willingly or unwillingly (as in the case of foreclosure) to bring about the loss of household land, has undermined the social and income security mechanisms that customary tenure systems provided to other family members. In turn, the failure of legal systems to evolve that adequately ensured just compensation to spouses in cases of divorce from or death of the male head of household, following sales or foreclosure, has heightened the cry for joint registrations.

Investment and Credit. Neither Wilson (1972b) nor Odingo (1983) found any correlation between title and investment. Farmers in Kisii were just as willing to plant permanent crops before registration as after; smallholders wanted to develop holdings regardless of whether title was held to meet subsistence and cash needs; large title holders were not inclined to cultivate more of their underutilized or uncleared land (Wilson 1972b). Haugerud (1983, p. 82) states that "[l]and consolidation and registration have not led to agricultural development beyond the widespread incorporation of export cash crops

into smallholdings . . . ." Cash-crop production and peasant incomes increased following the first registrations. But the probable cause was elimination of restrictions on African production of cash crops and increased access to complementary inputs (Okoth-Ogendo 1976).

Smallholders as a group tend to exhibit very low demand for institutional credit. Even though Wilson (1972a) found a strong inverse relationship between capital investment per hectare and farm size, smallholders tended to rely on self-financing. Odingo (1985) found that farmers were reluctant to use land as collateral because of fear of losing it. In the Machakos area, only 34 percent of the farmers sampled had applied for credit, but very few had applied to commercial banks or used land as collateral. In the Nakuru area, only 1 percent of farmers sampled had applied for credit.

Prior to land registration, a few loans were made by the state sponsored Agricultural Finance Corporation (AFC). After land registration, commercial banks were more reluctant to extend credit to smallholders unless title deeds were used as security (Wilson 1972b). The minimum size of loans for most banks exceed the capital needs of smallholders. Because small loans generate little interest revenue, lenders have difficulty recouping administrative costs. Loan preference is thus given to registered proprietors, those with off-farm employment or salaried positions, and larger farmers. Commercial bank borrowers in Kisii had land holdings almost three times the average size for the district (Wilson 1972a).

Okoth-Ogendo (1976) adds that while title is now a necessary condition for credit, social status and liquidity are the sufficient conditions. He says that "AFC loans in most districts go to less than 2 percent of title-deed holders in any one year. . . . Both public and private agencies have become very reluctant suppliers of agricultural credit to small farmers except under the most exhaustive scrutiny. . . . [A]lthough [these] institutions had wide powers of foreclosure, sale or appointment of receivers in case of default, it was not always easy to exercise them" (Okoth-Ogendo 1976, p. 175). Foreign owned banks expressed the most trepidation about foreclosure. Yet, even if foreclosure is difficult, title still increases lenders' security; as long as the title is in the bank's possession, the landholder is unable to obtain additional loans until the first is repaid (Wilson 1972b).

The hypothesis that registration will increase credit supply assumes an elastic supply of funds to lenders. Empirical evidence suggests that title increases certain borrowers' access to credit (Wilson 1972b), but in situations of credit rationing, title simply allows some farmers to increase use of credit while others have an exactly offsetting decrease. Okoth-Ogendo's (1982) findings that farmers who received title did not expand credit use because of constraints on credit supply support this conclusion. In some areas credit volume was not increased but simply redistributed to larger farms owned by more wealthy individuals.

Land Markets. Individualized tenure and land registration in Kenya has not created a well-functioning land market, partly because a fairly robust market had emerged in some areas even prior to the reform, and partly because Land Control Boards impose restrictions on land transfers. Many people decided

to purchase land immediately prior to registration to have holdings adjudicated in their names. But this resulted in only a slight, temporary increase in transactions, a small aberration on a long-run, gradually increasing trend in transactions over time (Wilson 1972b). Okoth-Ogendo (1976) observed few land transactions and attributes the lack of activity to the perception of farmers that individualized tenure did not include the option of selling land. Haugerud (1983) observed a sharp increase in land sales just prior to registration, but less activity after registration. She concludes that educated elites, who understood the implications of registration and who had capital to invest from nonfarm employment, used the opportunity to acquire land as a speculative asset.

In Wilson's (1972b) Kisii sample, 45 percent of the buyers of land were full time farmers, 41 percent were self-employed as traders, and 14 percent were government employees. In contrast, 95 percent of sellers were farmers with no off-farm employment. Land was often sold out of financial hardship, widows being a typical case. These results may seem to suggest a tendency toward increasing land concentration, with large farmers buying out the small. However, Wilson states that the average buyer owned 4.8 hectares before the transaction; the average seller owned 6.4 hectares.

The motives for buying land vary: (a) provision of land for children's inheritance; (b) to give a wife a separate holding in the case of a polygamous marriage; (c) capital appreciation from rising land values; and, least important, (d) land as a source of revenue (Wilson 1972b). Many of Wilson's (1972a) Kisii respondents who acquired land over 10 years prior to his study had not planted any crops; in a few cases holdings were never cleared.

Land accumulation has been an unintended consequence of the land reform, particularly in the peasant sector (Okoth-Ogendo 1976). Land accumulation has taken place in two ways: (1) from previously influential and wealthy families acquiring larger than average holdings during the late colonial reform; and (2) from persons with access to off-farm income increasing their holdings after the reform through purchase (Haugerud 1983). Those purchasing land did so for sake of speculation, future security for their sons, and cash borrowing power. About 15 percent of 1,545 titles from one portion of the Embu coffee and cotton zones had loans charged to them (Haugerud 1983). Over half the loans charged to cotton zone titles were taken out by land purchasers, but not all for agricultural purposes. More than half the land of purchasers in the sample had less than two-thirds of their land under cultivation (Haugerud 1983).

Despite the considerable public expenditure for land registration, customary law continues to determine land sales and successions. Coldham (1979) observed that 30 percent of land sales in Kadianga from 1963-73 and 15 percent in Gathinja during the 1963-74 period were not recorded. In Embu, Haugerud (1983) found that approximately one-fifth of the respondents, 20 years after land demarcation, resided on land registered in the name of a person who was not a household member. Of these, approximately three-fifths resided on land registered in the name of a deceased person (Haugerud 1983).

A similar pattern is evident for successions through inheritance. Coldham (1979) observed that in East Kadianga during 1966-73, not more than 3 percent of successions had been registered by 1977, and in Gathinja during 1963-74, not

more than 21 percent. In Kisii, less than 1 percent of the probable deaths of registered landowners since registration started in 1965 had been registered (Wilson 1972b). Coldham (1978) and Haugerud (1983) attribute these problems to the long, tedious, and costly procedures in the 1963 Act for determining heirs and registering successions. Haugerud (1983) adds that the need to resolve disputes related to one owner/one parcel contributed to landowners' delays in registering the change. Coldham (1978) concludes that the less the land register reflects what is happening on the ground, the greater the likelihood of disputes in the future.

Haugerud (1983) explains that land reform failed to take account of the Embu preference for multiple parcels to disperse the risk of crop failure, accommodate family development-cycle changes, and exploit the advantages of Mt. Kenya's ecological diversity. Twenty years after registration, she notes: "the intent of land consolidation is widely contravened as lending, borrowing, and multiple parcel ownership allow Embu households to continue to . . . operate holdings in scattered parcels" (Haugerud 1983, p. 74). Fully three-quarters of her sample borrow land, lend land, or both, showing the persistence and importance of customary tenure practices.

Uganda

Up to 1900, land rights among the Baganda were obtained either through inheritance and membership in a kinship group or through allocation by the Kabaka (king) or other political officials. Control over land was closely associated with political power in the highly centralized and hierarchical Baganda society. Below the Kabaka were administrative chiefs in charge of large areas that later became counties, and below them were sub-governors of counties, district and village heads. The Kabaka allocated political officials the rights to control land and govern the peasants on the land; in return, these officials had various obligations to the Kabaka. In general, rights to control and allocate land accompanied political office and these rights were passed to the next officeholder upon death, promotion, or demotion.

The political system was intensely competitive, with very few posts allocated through inheritance. Those with large numbers of peasants under their jurisdiction held an advantage. Yet, peasants could move freely and frequently did so to better their condition. Competition resulted among political leaders for peasant support. Richards et al. (1973, p. 57) note that "[e]ven 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." In return, peasants were obligated to give free labor to those above them in the political hierarchy. Land was an instrument to attain social status and advance one's political career.

Traditional Baganda land tenure also included individualized rights to land through direct grants from the Kabaka to an individual chief or peasant, independent of any political obligations. This form of tenure was a response to the individuals' need for tenure security in a political system in which chiefs and others were transferred throughout the kingdom, often far removing them from their clan's lands or areas where they had usufructuary rights through inheritance (Mukwaya 1953).

The Buganda Agreement of 1900 and Land Law of 1908 transformed the tenure system by introducing essentially freehold tenure on a grand scale (West 1972). The Agreement, between the British Special Commissioner and the Baganda chiefs and Kabaka, provided for British control over Buganda and allocated 1,003 square miles of land to the Kabaka and another 8,000 square miles to chiefs and other political notables. Land was allocated in square-mile blocks; these lands are known as **mailo**. Less than 300 square miles was allocated in freehold to churches, the central government, and non-Africans. About 4,000 individuals received **mailo** land. Very few **mailo** owners received all of their land in a contiguous block. Many had parcels spread widely over the kingdom (Mukwaya 1953). **Mailo** land could be bought and sold, inherited, or given to others, but could not be alienated to non-Africans.

The Buganda Agreement altered the relationship between political officials and peasants, conferring virtual freehold rights, in perpetuity, to the then-current officeholders, transforming their function from that of political lords with political relationships to subjects on the land to landlords with essentially economic relationships to those farming their lands. Peasants were changed from subjects to tenants, freed from political obligation to those controlling the land, but exposed to economic forces impinging on their use of land.

Mailo owners acted as political administrators. Peasants continued to relate to **mailo** owners in the same way as they related to political officials or chiefs in the past. The tribute of labor and goods due the overlord under the traditional system gradually became transformed into economic rent, especially with the rise of cotton as a profitable cash crop after World War I. In 1928, the Busuulu and Envujjo Law was enacted to protect tenants from economic exploitation or eviction by **mailo** owners. Absolute rents were fixed at 10 shillings per acre plus a small payment for cash crops. Tenants could not sell their tenancy rights, but the tenancy was inheritable. Tenants could not be evicted, unless they abandoned the land or if the land were purchased by a new owner who could demonstrate that he needed the land for his own agricultural use and no alternative land were available. An owner could not evict tenants in order to engage in commercial agricultural activity; only the owner's subsistence production rights were guaranteed.

Security of Tenure. Prior to the Buganda Agreement, individual peasants had guaranteed inheritable usufructuary rights to land. In a village controlled by clan elders, the individual's usufructuary rights were derived from kinship and were quite secure. In villages controlled by politically appointed officials, the individual's land rights were guaranteed by virtue of being a subject of the political jurisdiction. Kinship rights were somewhat more secure than those derived from the status of political subject; not infrequently, large numbers of peasants would follow a successful clansman as he was transferred to other political positions in the kingdom (Mukwaya 1953).

Security of tenure thus seemed to be very high for both owners and tenants on **mailo** land, although ". . . nevertheless a man felt more secure if he owns his land . . . " (Mukwaya 1953). But, 20 years later, Fortt (1973, p. 80) noted that "the tenant in practice lacked real security of tenure" because owners could evict tenants to use the land for their own food production,

through charges of witchcraft or general bullying, and because the Baganda courts were dominated by landowners.

The Land Reform Decree of 1975 eliminated **mailo** land, transferred all land to state ownership, made **mailo** owners lessees from the state and gave them eviction rights over tenants who were accorded the status of tenants at sufferance on sub-leases. Although legally the tenure security of tenants should decline, landholders believe that the Decree was aimed at taking the land of **mailo** owners. Thus, the owners feel less secure while the tenants feel their positions are improved.

Investment and Credit. The establishment of virtual freehold rights on **mailo** land did not induce landowners to make land investments. Richards et al. (1973, p. 297) note that "[t]he **mailo** system itself . . . did not result in the commercial use of land by its owners for a period of some 40 to 50 years . . . ." Many aspects of the land law restrained commercialization of agriculture by **mailo** holders and tenants. Mukwaya (1953) noted that the strong protection of tenant rights mitigated against an owner aggregating enough land to invest in machinery and capture economies of scale in farm operations. On the other hand, tenants are prevented from mortgaging land to obtain loans for farm investment. Mukwaya suggests that in spite of a high savings rate among progressive farmers, there was little agricultural investment because farmers used all their savings to purchase land, leaving no funds for capital purchases.

West (1972) argues that individualization lead to less investment in land than might otherwise have occurred, because the provisions of **mailo** law that protected and increased tenant security denied land access to potential investors who had amassed capital from profits in non-farm activities. On the other hand, West (1972, p. 85) argues 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." A survey of commercial farmers revealed that most had used bank credit, ". . . although there has been much debate as to the extent to which these loans have been used, as intended, for the purpose of [productive] development, rather than for consumer goods" (Hougham 1973, p. 143).

Mailo land under **busuulu** tenancy could not be used as collateral for bank loans, and foreclosure was impossible because of prohibitions on non-Ugandan ownership of **mailo** land (West 1972). Thus, it is not surprising that Richards et al. (1973) found that most of the capital invested in agriculture on **mailo** land came from nonfarm or cash crop earnings rather than from lenders. Mukwaya (1953) found that, in 1950, only 1.5 percent of the **mailo** land in his sample was mortgaged. This evidence suggests that the supply of credit may have been constrained by the inability to alienate **mailo** land to non-Baganda, but also that the demand for credit for agricultural investment may not have been particularly strong, given investment opportunities in other sectors and the availability of other capital sources.

Land Markets. The land market in Buganda is pervasive and is mostly responsible for breaking up the large landholdings granted to the original **mailo** owners. Mukwaya (1953) found that 58 percent of landholders surveyed in Busiro and Buddu counties had purchased their land, accounting for 24 percent of the land area in the sample. Of 415 parcels of 20 acres or less, 67

percent was acquired through purchase and only 9 percent through inheritance. Of 14 parcels over 600 acres, only 21 percent was acquired through purchase while 80 percent was inherited or still held by the original owner. By 1969, there were about 112,000 **mailo** owners compared with the 4,138 original owners in 1900 (West 1972).

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" (Mukwaya 1953, pp. 36-37). Owners of land have the right to sit on local councils, the first step on the political ladder, and owners are eligible for appointments as chiefs. Thus, ownership was the **sine qua non** of a political career (Mukwaya 1953). Writing in 1973, Hougham (1973, p. 125) noted that "[i]n 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."

Yet, the market has allowed land to be transferred to those with high-valued uses. Richards et al. (1973) provide convincing evidence that the existence of a land market was critical in the emergence of a class of commercial farmers. Most commercial farmers had acquired their land through purchase, usually with capital accumulated through nonfarm work or sale of cash crops. Fortt (1973, p. 76) noted that many tenants purchased land during 1930-60, 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 fulfill their monetary needs, and so were necessarily 'men of property' who had to pay attention to the economic value of their land." Tenants wishing to purchase their land from the owner were assisted by the low price of **mailo** land occupied by tenants since any other buyer would be unable to occupy the land (Fortt 1973).

In the 1960s, the market enabled Baganda in the commercial or public 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 1973). The **mailo** system facilitated the emergence of an agricultural middle class, progressive farmers with landholdings larger than tenant plots but much smaller than the original **mailo** block grants. In a 1967 survey of commercial dairy, coffee, and sugar/tea farms, Hougham (1973) found that 67.5 percent of the farms were purchased by their owners, 19.7 percent purchasing after a nonfarm occupation only, and 21.4 percent after a previous occupation that included some non-farm work.

Clearly, factors other than the individualized **mailo** tenure system were also critical in the emergence of commercial farming, factors such as favorable commodity prices and development of the commercial sector that provided the source of capital for many commercial farmers (Fortt 1973). Yet, **mailo**

freehold allowed a land market to develop rapidly, and this market, in combination with profitable agricultural opportunities, provided land access to a commercial class of farmers.

Zimbabwe

The 1925 Carter Commission urged that specific areas of the colony be set aside in which Africans alone could purchase and hold freehold title to land. The Land Apportionment Act of 1930 partitioned all lands in the colony into European and African reserves, including some 7.5 million acres as African freehold called Native Purchase Areas. Motivations for the partitioning were complex. According to Cheater (1984), the purchase areas were intended to reserve some land for Africans before all land was purchased by Whites. Weinrich (1975) claims that the apportionment was intended to prevent progressive and wealthy African farmers from opening up farms in predominantly European areas, but that there was a genuine interest in assisting progressive peasants. Palmer (1977) argues that the motives were to protect the interests of white settlers with little regard for African farmers or African farm production.

Regardless of the motive, the Act sharply reduced the supply of land to black Africans by depriving them of the right to buy land outside the reserves. Other restrictions limited the opportunity to buy land within the reserves if inconsistent with European economic interests and prohibited peasant farmers from subdividing their farms. In 1964, the government altered its classifications, grouping European farming areas with African purchase areas as freehold, separate from tribal trust lands (communal land). According to Massell and Johnson (1966), this classification delineated 41.0 million acres for freehold and 40.1 million areas in reserves under customary tenure. Of the 41.0 million acres, 36.8 were held by Europeans and 4.2 were designated as African freehold. This classification aimed to make the distribution between white and black freehold areas seem more equitable and to enlist the support of black African farmers for white farmers and their interests.

On communal lands, usufructuary rights are allocated to individual peasants by chiefs and headmen. Prior to colonization, land was plentiful and labor was the scarce factor of production. However, with the alienation of land to white settlers, rapid population growth due to improved medical services, and the introduction of the oxen plow, land became the more limiting factor in communal areas by the 1940s (Massell and Johnson 1966; Weinrich 1975). "As the African population grew and could obtain no new land outside the . . . fixed tribal boundaries, shifting cultivation became impossible . . . [and fertility declined]" (Weinrich 1975, p. 67). Today, most communal areas are heavily populated and subject to ecological degradation (Cheater 1984).

Purchase lands, in contrast, are relatively well developed, in part due to strict criteria in selecting settlers. Following World War II, the government adopted increasingly strict requirements for settler applicants as the demand for freehold in purchase areas intensified. Weinrich (1975, p. 145) notes that "[u]ntil 1952, only some agricultural knowledge was required [to obtain freehold]. In 1953, the master [farmer] certificate became a prerequisite. By 1957, applicants had to possess in addition capital assets in cash

or kind to the value of £300. By the 1960s, a points system was introduced by which . . . points were given for capital equipment, agricultural experience, [and] proved character of the applicant . . . ." These requirements ensured that settlers in newer purchase areas were more skilled and better financed than farmers in older purchase areas or in communal areas. This distinction is fundamental to analyzing the Zimbabwe literature on impacts of land registration.

Investment and Output. Massell and Johnson (1966) analyzed survey data from 56 farms in a reserve area and 20 farms in a purchase (freehold) area. They assert that individualization has had a significant impact on investment: "Purchase area farmers have a greater opportunity to invest in the land, to undertake extensive soil conservation measures that raise and maintain soil fertility . . . . Because the [reserve] farmer does not have freehold tenure, there is little incentive for him to improve his holding through soil conservation and other measures . . . also . . . land cannot be mortgaged by the farmer to obtain credit" (Massell and Johnson 1966, pp. 16-17).

To support these conclusions, Massell and Johnson (1966) observe that family size was smaller in purchase areas (5.3 versus 7.2 persons) and labor migration for nonfarm work was considerably less, even though off-farm work was equally available. Purchase area farms were more market oriented, a majority selling over 50 percent of their output, while the vast majority of reserve area farms sold less than 10 percent. Reserve area farmers, on average, cultivated 10 acres of available land; purchase area farms averaged 219 acres with an average of 23 acres cultivated.[3] Purchase area farmers applied manure and fertilizer at higher rates, owned almost five times the value of farm implements per farm, and worked more hours per cultivated area, in spite of smaller family size and larger farms. Average value of crop output per hectare was nine times greater, and the marginal productivity of land was five to nine times greater in the purchase area.[4] Although Massell and Johnson (1966) recognize that the evidence is imperfect and circumstantial, they attribute at least part of these outcomes to incentives created by individualization.

Yet, purchase area farmers are more highly skilled, are better capitalized, and are offered better services through public investment. Virtually all of the purchase area farmers had master farmer certificates, while only three of sixty-four reserve area farmers were master farmers (Massell and Johnson 1966). Purchase farmers "begin with a larger capital endowment than reserve farmers" (Massell and Johnson 1966, p. 30). Early government investment in roads, bridges, water supplies, conservation works, fencing, dipping, and afforestation improved public infrastructure (Cheater 1984). The government "also funded capital investment on individual farms . . . through loans for fencing, dams and boreholes from the Land and Agricultural Bank, the African Loan Fund and the Agricultural Finance Corporation . . . . In the mid-1960s, seasonal loan finance [for seed, fertilizers, chemicals] became available from the African Loan and Development trust . . . " (Cheater 1984, pp. 13-14). In addition, the government provided purchase area farmers with assistance in land clearing and extension services (Massell and Johnson 1966; Cheater 1984). Soil productivity also differed between purchase and reserve area farms. Purchase area farms in Massell and Johnson's study, had been created within 10 years of the survey on "virgin" soil, while land in reserve areas had been cultivated for years (Massell and Johnson 1966).

Cheater (1984) raises another, more subtle, factor for the progressive agriculture in purchase areas. As with Kenya and Uganda, most of the settlers had been employed as wage laborers at some stage of their lives, often for Europeans, before settling in purchase areas. They had traveled widely and had experienced living in cultures other than that into which they were born. She adds, "Being able to read and write, having some knowledge of government facilities, and having lost the peasant suspicion of government may in fact be more helpful to the agricultural entrepreneur than a lifetime of subsistence cultivation . . ." (Cheater 1984, p. 19). In many ways, the economic behavior of freehold farmers is more akin to European farmers than to other African farmers in reserve areas (Cheater 1984).

Despite advantages in access to credit by holding freehold, purchase area farmers often chose not to use credit for investments, but relied on financial assets accumulated through nonfarm work (Weinrich 1975). This reliance on self-financing reflects the financial risks farmers perceive in acquiring credit. Cheater (1984, p. 41) writes that a "majority of farmers in Msengezi use short-term seasonal loans . . . but [farmers] must be certain that, in the event of everything going wrong, they can still repay those loans, lest they run the risk of having cattle, equipment or even their farms sold to recover debts . . . . Those . . . farmers who do not have to rely on loan finance . . . generally [use] . . . recommended rates [of fertilizer] . . . . Those who rely on loan finance generally omit most of the planting [fertilizer] compounds."

Weinrich (1975) sheds some light on the effects of differences in management skills. By comparing the agricultural performance of master farmers and other peasant cultivators within communal areas, she found that only 11 percent of peasant cultivators had income above £50 per year, while 80 percent of all master farmers had such income, reflecting higher economic returns to improved management, large household sizes (8.4 versus 5.5 persons), and larger farm sizes (Weinrich 1975).

Weinrich (1975) also presents data for master farmers across tenure types. The median farm size for master farmers in reserves was 7-9 acres, compared with 150-200 acres for master farmers in purchase areas. While 74 percent of the master farms in the tribal reserve sample had agricultural income less than £100, 60 percent of the master farmers in the Mutadza Purchase Area had agricultural income above £100, and 28 percent above £250. However, a comparison of yield data is revealing. Although master farmers in reserves produced 9.2 bags per hectare of maize and 4.7 bags per hectare of millet in 1965/66, master farmers in the purchase area achieved yields of only 3.2 bags per hectare of maize and 3.2 bags per hectare of millet. These lower yields for the purchase area mainly reflect labor shortages. Even though master farmers in purchase areas spend more time on the farm, they cultivate proportionally more area; hence, they work fewer hours per hectare, achieving higher marginal productivity per unit of labor and thus higher farm income.

In conclusion, the productivity difference between African reserves and purchase land can be explained by several factors. First, purchase area farmers had higher management skills as evidenced by the higher proportion of master farmers and higher levels of education. Differences are also due to higher capital endowments for investment, higher marginal productivity of superior soils, better infrastructure, better resource endowments, and the selection

criteria used to select farmers for the purchase areas. Because of the inability to control for these factors, it is difficult to draw firm conclusions regarding the effects of individualization of tenure on investment or output. However, the long waiting lines for purchase land and the fact that capital is invested on the farm rather than elsewhere suggest that individualization was more than simply neutral with respect to incentives for investment.

Tenure Security and Land Markets. Evidence on tenure security is quite limited. Cheater (1984, p. 11) observes that "[b]lack people in the past wanted to buy freehold farms in areas outside the jurisdiction of the chiefs, to move away from 'traditional' forms of rural social organization . . . ." Cheater lists the reasons offered by those in the purchase area sample for buying or occupying their farm (total 301 responses). Desire for tenure security, expressed in six different ways, is listed 131 times, suggesting that farmers considered themselves relatively insecure in the long term in their previous land use arrangements.[5] One might conclude that the strong demand for freehold land is suggestive of higher demand for tenure security, although this phenomenon is intertwined with the outward push of settlers from reserves as a result of the acute land scarcity in reserve areas. As in the Kenya case, the fact that settlers in the course of previous employment were able to accumulate capital for buying land was an important element in the self-selection of settlers for purchase areas.

Summary

Before summarizing the effects of land registration on title security, investment, and land markets from the three country case studies, two caveats must be noted.

First, the economic evaluation of land registration requires an analysis of costs and benefits with and without policy intervention. The literature for Kenya, Uganda, and Zimbabwe provides an overview of the effects of land registration, particularly such negative consequences as inability to arrest fragmentation, displacement of landholders rights, and registration costs. However, this body of research does not analyze the costs of not having registration, including the problems of fragmentation, tenure insecurity, and high litigation costs associated with customary tenure in many instances. Even if some of these problems were caused by colonial policy, or were location specific, land scarcity will ultimately increase with growth in population and economic opportunity. Society will incur costs if customary tenure systems do not evolve rapidly to cope with these changes. Whether these costs are reduced by land registration is open to conjecture.

Second, tenure conversion from customary to registered leasehold or freehold can be a very long process, especially in economies with limited infrastructure, limited pressure on land, and a steep learning curve to institutional and economic change. Measuring impacts of major institutional reform may require decades of experience rather than years. The evolution of customary tenure systems involve similar time horizons.

Evidence from Kenya supports the hypothesis that individualization of tenure and title registration increases landholder tenure security in some,

but by no means all, cases. Improvements in tenure security and demand for title appear to be strongest in the presence of rising land scarcity and commercialization. Regardless of tenure status, land tenure rights appear to be secure in situations of low population density, low land scarcity, limited economic opportunity, and where strong local communities sanction usufructuary rights on the basis of long-term settlement. In both Kenya and Uganda, titling actually increased the tenure insecurity of family members whose rights were excluded from the register and landholders who lost land to more influential parties able to take advantage of the registration process (in Kenya), or favored by political authorities (in Uganda).

However, it is difficult to separate the effect of registration from other influences on tenure security. Individualization of tenure is often undertaken where insecurity is high from population pressure or rising land value, and disputes may linger for years. Registration may increase tenure insecurity in the short run, but security may increase after expectations adjust. Still, the resiliency of customary tenure in Kenya, particularly concerning successions and failure to re-register transactions, has undermined the intent of freehold tenure and brought into question the benefits of land registration.

The failure to register transactions and the simultaneous adherence to customary tenure rules in registered areas may be due to several factors. First, in cases of profound social and institutional change such as land tenure individualization, landholders may not fully appreciate the potential benefits for many years. Research by Odingo (1983), Okoth-Ogendo (1976), and Coldham (1979) showing farmers' limited knowledge of land registration supports this interpretation. Likewise, in Uganda the **mailo** owners did not immediately recognize the economic nature of the land asset created by registration of virtual freehold. Second, customary tenure systems may be inherently more stable than was presumed by the sponsors of registration. This was clearly the case in Uganda and in certain areas of Kenya where demand for title is low. Third, tenure insecurity may exist under customary tenure, but the costs of tenure conversion--heavily bureaucratic procedures, survey costs, and informal gratuities--may be too high to warrant registration (Mukwaya 1953; Coldham 1978).[6] Fourth, it may be that in some cases the incompatibility of legal rules (e.g., one household/one parcel) with the ecological realities of African farming make adherence to tenure-conversion regulations too impractical and costly to the individual or household (Haugerud 1983; Coldham 1978).

On balance, there is little evidence to support the hypothesis that registration, through increased tenure security, has increased investment in agriculture. There is also no evidence that the demand for capital increases if tenure is changed to freehold. Small farmers generally appear unwilling to risk their land for credit, and banking procedures impose high costs on smaller borrowers. Title does appear to increase lender's security, but since the supply of capital to agriculture is often constrained by market imperfections, credit is biased toward larger, more influential farmers.

As for land markets, a market did emerge in the case of **mailo** land in Uganda, and this market was important in the economic development of Ugandan agriculture. However, in the Kenyan case, land markets had begun to emerge well before registration, although accompanied by an increased number of disputes and high litigation costs. The frequency of land sales did not appear

to increase after registration, although the certainty of tenure following the transaction appeared more secure. Commercial transactions that remain unregistered provide the most insecurity because they lack legal recognition (Coldham 1978). Problems of tenure insecurity are exacerbated in rapidly changing tenure systems, where land transfers have the protection of neither the state nor customary tenure.[7]

Toward a Revised Theory

The preceding review of empirical evidence suggests the need for a broader model of African land tenure, individualization and tenure conversion. While the neoclassical theory has been quite instrumental in guiding the direction of the reforms, the outcomes fail to measure up to expectations. In general, the theorized effects of registration, particularly higher investment and increased credit supply, are not apparent in the African case. In contrast, empirical evidence shows that many of the important effects of registration derive from the nature of the rights allocated to individuals, the institutional rules that define the exposure of individuals to others' actions, and the impact of rules in determining who has right to do what to whom without compensation. A broader theory is needed, one that combines elements of institutionalist theory and political economy with a broader neoclassical perspective that takes account of market imperfections.

An Institutionalist Perspective

Institutions are sets of rules that define the rights of individuals with respect to each other in their use of property. Corresponding to one person's right is another person's duty not to interfere in the exercise of that right. The ability to act without permission of a second party creates a liberty for the rights-holder and creates exposure for the duty-holder to the adverse consequences of the rights-holder's actions. The rights-holder is free to act, without securing permission of others; those with exposure must secure the agreement of the rights-holder not to act. Right-duty and liberty-exposure are opposites that are implied by any definition of property rights in land under any system. Changes in tenure rules, such as individualization, may drastically alter the distribution of rights and duties among members of society. The fact that many of the notable consequences of individualization involve shifts in access to land, rather than efficiency gains and production, is predictable from an institutionalist perspective.

Transactions are the outcome of interactions among individuals or groups concerning land. Institutions, the rules of interaction, define property rights in land, which in turn determine the nature of transactions among individuals concerning land. The definition of property rights determines the range of *possible* transactions concerning land, although other institutions and conditions, such as the nature of credit and labor markets, determine the *feasible* set of transactions. Further, it is the institutions governing land tenure and exchange that determine transactions costs and who bears the cost associated with transferring land rights. Institutions determine who will

capture the gains from technological change or the increases in land value that ensue from population growth, capital investment, or geographic shifts in economic activity. Institutions and property-right definition are integrally linked with income distribution because institutions determine who has what rights with respect to the income flows generated by resource use.

During registration, the state must determine who will be deemed the owner(s) of a parcel and must clearly identify and record the complete set of use rights, exclusion rights, and transfer rights associated with that parcel. These efforts generally entail large search and monitoring costs. The state must further bear the costs of any resolution of conflicting claims. In effect, there is a transfer of transactions cost from local land authorities to the state, with one important distinction: whereas local authorities have in place customary rules for distributing the burden of these transactions costs in a decentralized manner among community members, who have a more intimate knowledge of land tenure history, the state faces the daunting task of undertaking these duties with limited resources and a highly centralized bureaucracy.

Thus, many of the charges against the displacement of rightful owners in the Kenyan case stem from government's unwillingness or inability to bear the full transactions costs needed to adjudicate and register all rights. Some individuals received more rights than they were entitled, others lost rights. In some cases land registration has been undertaken with broader political motives, as was the case with the Mau Mau revolution in Kenya, and the aim to institute state and corporate control over land, with land redistribution, in Somalia (Gunn 1987). Once land is adjudicated, one might argue that the costs of land-right determination are fully discounted in the land value, and certainty replaces ambiguity of tenure. But even so, the resiliency of customary tenure has led to disputes continuing long after adjudication in Kenya.

The distinction between "ownership security" and "land title ownership" is fundamental to the analysis of title and investment. Tenure security, narrowly defined, is the landholder's perception of the probability of losing land within some time period. It can also be defined more broadly as the landholder's perception of the likelihood of losing a specific right in land such as the right to cultivate, graze, fallow, transfer, or mortgage. Titling systems cannot be viewed as homogeneous interventions conferring equivalent rules and security of ownership from one country to the next. Depending on legal statutes, title may permit or restrict transactions in land, or may grant or prohibit specific use rights. Some form or another of restrictions on transfer rights exist in the legal statutes of Somalia, Kenya, Nigeria, and Zimbabwe, among others.[8] Indeed, land allocation under customary tenure may be less restrictive than under statutory tenure.[9] In some cases, registration is unlikely to lead to emergence of a well-functioning land market unless fundamental revisions are made in statutory law.

High levels of tenure security can exist without legal possession of title, as was evident in the less land-scarce areas of Kenya or areas of long-standing settlement in Uganda. Customary tenure in these instances provided landholders with tenure security to rights of use, exclusion, and transfer without any legal title definition, registration, or government enforcement.

Conversely, high levels of tenure insecurity may exist even with legal title. To the extent that the land code is ambiguous in its definition of rights, the government lacks the will or the means to enforce those rights, or the registration process fails to properly identify and record the complete set of rights-holder(s) and land rights, tenure insecurity will be the outcome.

The institutionalist view offers a different perspective on property-rights evolution in Africa. Traditional land tenure systems were based on status/grant transactions, in which individuals' rights and duties were defined by their position in society, and in which rights were transferred or endowed through grants rather than exchanges. For example, a chief might be obligated to grant the request for unused land from a lineage head, and the "token" given the chief was acknowledgment of his authority rather than payment for land rights granted. Thus, the "communal" right of access to land was transformed into an individualistic use right through status/grant transactions.

Increases in population density and commercial opportunity in agriculture have transformed status/grant transactions into more individualistic bargained or administrative transactions in many areas. Bargained transactions, such as market transactions, occur between parties defined as equals, each seeking maximum advantage in a calculated manner within the rules governing the transaction. In some cases, the traditional status/grant transaction of borrowing or loaning land has evolved into more of a bargained lease/rental arrangement, or use rights under family control have evolved to include transfer rights for monetary gain. But in other cases, status/grant transactions have given way to administrative transactions, those carried out between individuals in superior-inferior power positions, such as observed by Haugerud (1983) in Kenya, Koehn (1983, 1984) in Nigeria, and Gunn (1986) in Somalia. The definition and distribution of property rights in land can be greatly influenced by those in dominant positions in administrative transactions.

Whether the traditional status/grant transaction evolves into a bargained or an administrative transaction depends on the prior definition of property rights and the distribution of political and economic power which together determine advantage and exposure in the process of change. Even if a traditional land tenure system evolves into one with more individual rights in land, the distribution of wealth, power, and income and the path of economic development depend critically on how this transformation occurs.

Market Imperfections

Although evidence from the case studies indicated little or no significant difference in investment and productivity between titled and untitled farmers, the results are clouded by a fundamental ambiguity regarding investment demand and supply as causal factors. Investment supply and demand can be categorized into four very general scenarios with regard to restrictions on input supply: (a) low investment demand, supply of investment goods and services is constrained; (b) low investment demand, supply is unconstrained; (c) high investment demand, supply is constrained; and (d) high investment demand, supply is unconstrained. Assuming that market imperfections do not severely constrain input supply, input utilization after individualization will be high only under scenario (d).

The case studies provide some evidence of market imperfections which affect the ability of farmers to make investments. Reference has already been made to the case of credit rationing in Kenya affecting the supply of credit. Okoth-Ogendo (1976) questions the quality of extension advice and services accompanying the Kenya reform and the appropriateness of technological innovations. Haugerud (1983) explains how low prices and poor economic returns lowered farmers demand for land title. Odingo (1985) questions the capability of an illiterate peasantry to respond to new technological options and to adopt new farming practices. Okoth-Ogendo (1976) and Odingo (1985) point out the importance of new roads, hospitals, schools, and input-distribution systems for relaxing the constraints on the supply of investment options. And Haugerud (1983), Ega (1979), and Odingo (1985) question the capacity of low resource farmers to respond to investment options under conditions of low cash income and subsistence farming.

The limited neoclassical theory predicts that individualized tenure will increase both investment and credit demand and credit supply for investment. Yet, a broader application of economic theory reveals many conditions that determine whether registration will affect investment demand or credit supply: (1) the rights that are conveyed by individualized title; (2) changes in landowners' perception of tenure security; (3) development and functioning of land markets; (4) existence and profitability of alternative technological options for land investment and whether farmers have good information about these options; and (5) operation of credit, input and labor markets.

In many less developed countries, the supply of institutional credit is severely constrained by capital market imperfections. Foreign exchange shortages may constrain capital imports. Government budget deficits may constrain the supply of inputs and extension services by parastatals. Opportunities for land investment may be limited because appropriate technologies either do not exist, are not widely disseminated, or are not considered to be economically profitable by farmers. Lenders may perceive no increase in security from land as collateral if political pressures prevent foreclosure, or lack of active land markets prevents conversion of foreclosed land into a financial asset. The aggregate supply of credit may be highly inelastic. Registration in the face of these imperfections will likely induce little or no investment response.

In addition to these mediating factors, a general model of land registration's effects must account for the socioeconomic process which generates title status. More specifically, does an individual acquire title through purposeful choice, or is title externally imposed? Under exogenous titling systems, landholders' parcels are registered regardless of whether the landholder wants title. The Kigezi scheme in Uganda or land registration in Kenya are examples, although exogenous titling systems tend to revert to endogenous systems with time, as landholders have the option of registering or not registering successions or sales. If provision of title involves self-selection by farmers or purposeful choice by land-registry officials, then the process is endogenous. Determining which farmers obtain title or which parcels of land are titled, then requires careful examination of farmer attributes and parcel characteristics. In the case of purposeful choice by registry officials, title acquisition may depend more on political influence, wealth, or social position in the community. Many of these factors may be extremely hard to measure, but the

influence of registration may be easily confused with the effects of other factors which accompany registration, as the Zimbabwe data illustrate.

These observations lead to the conclusion that success of land registration depends partly on the market environment and partly on the package of complementary inputs in the agrarian sector. The research also suggests that investment may remain unresponsive to technological options until the institutional framework of property rights provided by the land tenure system provides adequate and flexible security of tenure in use, exclusion, and transfer rights. Depending on the economic context, this may or may not require formal state intervention.

Conclusions

Success in land registration depends on the market environment and the structure of economic opportunities open to farmers. Land and rights to land are important, but are only one of several key inputs into agricultural production. In the presence of economic opportunities in agriculture, the institutions governing control of land can constrain development if inflexible rules of tenure prevent movement of resources among individuals or if tenure insecurity lowers investment demand.

The empirical evidence from Africa suggests that land registration has had very little effect on investment demand. Title appears to have increased lenders' security, but financial markets appear to be reallocating credit among titled borrowers, without substantially increasing aggregate credit supply. Individualization of rights in land and the rise of a land market may provide an important stimulus to agricultural development by transferring land to those able to extract a higher value of product. However, it is clear that, in the absence of profitable technological options, registration will have little effect on investment and productivity in agriculture. Under these conditions, the equity effects of registration, redistributing rights among individuals, will far exceed the efficiency effects on investment or output.

Registration is likely to have positive net social benefits when there are new economic opportunities in agriculture and new technological options are stymied by land tenure institutions. Registration without economic opportunity is premature; the costs of registration will produce very little benefit in changing agricultural production. Yet, the land tenure system is seldom static in the face of economic change. Traditional tenure rules evolve under pressure of new economic opportunities for individuals, usually toward increasing individual rights in land at the expense of group rights.

Registration is best viewed as a policy to assist in the evolution of land tenure institutions already under way, rather than a policy to stimulate fundamental change in economic behavior. Alternatively, registration may be used to avoid negative equity effects when farmers are threatened with loss of land to politically powerful individuals. But those making policy for African agriculture should not be misled by the theoretically derived promise that registration will unleash a torrent of investment in agriculture.

Notes

1. Since Africans in Kenya were not permitted to grow coffee until 1950, the importance of these figures is difficult to gauge.

2. Koehn (1984, p. 72), after observing the allocation of certificates of occupancy in two Nigerian states, concludes that ". . . poor rural and urban residents have been effectively barred from the land allocation system . . . ." Over 70 percent of the recipients of certificates were businessmen, public officials or traders, and all grantees had incomes significantly above the average for the area. Status/grant transactions were transformed into administrative transactions, and those with the economic or political power to influence the administrative transaction captured the benefits of change. Cobb et al. (1980, p. 15), in a review of road-construction impacts in Liberia, state that land title was obtained by those who had the economic and political resources to pursue the various approvals required for a deed. Few farmers have such knowledge, capital, or political connections. New roads increase land value and outsiders (usually educated urbanites) acquire deed to the more valuable land.

3. The remaining land is required to support livestock grazing, 8-15 acres of land being necessary to graze each head of cattle (Cheater 1984; Weinrich 1975).

4. Weinrich (1975) provides data for two purchase areas, Guruuswa and Mutadza, that reinforce these findings. Freehold farmers had more education and training, had larger families, used more capital inputs (fertilizer, implements, pesticides), and had more cattle.

5. Other responses included "inadequate land allotment on mission farm or reserve" (78 out of 301), "followed example of kin and friends" (55), "interested in farming/business investment" (49), "dislike of constraints in reserve" (41), and "production factors (soils, water, transport, markets)" (40), among others (Cheater 1984, p. 21).

6. "Indeed, given the bureaucratic hurdles that have to be overcome, the fees that are payable at each stage of the process, and the likelihood that several years will pass before matters are finalized, it is not surprising that so few successions are registered" (Coldham 1979, p. 619).

7. L. Alegwu Ega (1979) states that in Nigeria, commercial transactions in land (for example, purchases, pledge, and rent) usually take place illegally, that is, without the approval of the minister or his local representative. Adding to this complication, disputes occasionally occur over inherited land when the land might have been transferred without the knowledge of heirs. The consequence is numerous unresolved land disputes arising from conflicting claims. Disputes occur frequently only over land that has been transferred through commercial arrangement.

8. Cheater (1982), for example, speaking of one purchase area in Zimbabwe, notes that landholders are free to cultivate what they wish, but one landholder cannot grant use rights in land to another. Heirs to and buyers of land require state approval, even after title has been granted.

9. L. Alegwu Ega (1979) discusses the Land Tenure Law of 1962 and its amendments of 1963 in Nigeria. "The law categorically prohibited occupants under statutory right from transferring land by sale, assignment or mortgage without the consent of the Minister. Similarly, the landholder under customary tenure was prohibited from transfer of land by sale, mortgage or assignment to non-indigenes of Northern Nigeria without the Minister's approval" (Ega 1979, p. 290). However, he notes that landholders ". . . transfer their holdings at will and more or less exercise individual ownership rights over them . . . . Indeed, the incidence of transactions such as purchase, pledge and rent suggests that the law is being vigorously violated and implies a lag between the law and the tenure system" (Ega 1979, p. 292).

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