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EVALUATING THE IMPACT OF CONSOLIDATION OF HOLDINGS,
INDIVIDUALIZATION OF TENURE, AND REGISTRATION OF TITLE:
LESSONS FROM KENYA

by

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TABLE OF CONTENTS

Executive Summary	v
Introduction	1
A Review of the Studies	2
Expected Benefits of Land Tenure Reform	4
Security of Tenure	5
Access to Credit	7
Fragmentation and Subdivision	10
Land Markets, Accumulation, and Efficiency	15
Land Disputes	18
Investment in Agriculture and Increased Productivity	20
Security of Economic Opportunity	22
Overall Impact of Land Tenure Reform	23
Lessons for Future Research	25
Appendix: Detailed Review of the Studies	29
Bibliography	34

EXECUTIVE SUMMARY

The several micro-studies of the experience with land registration in Kenya constitute the most significant body of empirical research on land tenure reform in Africa. An examination of the methodologies utilized elucidates the complexities of doing research on this topic and the advantages and limitations in the African context of certain evaluative approaches and techniques. Moreover, these studies cast serious doubt on conventional expectations concerning benefits and responses to land tenure reform and contain important insights as to why those expectations have not been fulfilled in Kenya. They also identify several unexpected and arguably undesirable consequences of land titling. They represent a clear challenge to the conventional wisdom on the Kenyan tenure reform.

The general objectives of the Kenyan program have been to increase tenure security, eliminate boundary disputes and increase farmer incentives and ability to obtain credit and invest in agriculture. Land registration is also supposed to create conditions favorable to the emergence of a land market which will permit land to shift into the hands of more efficient producers. Achieving these intermediate objectives is expected to lead ultimately to increased agricultural productivity.

The cumulative evidence from the Kenya studies places these assumptions in question, and offers important insights as to why they have not proved out. External constraints have prevented some expected responses to titling from taking place. For example, factors limiting access of small farmers to credit--factors unrelated to tenure--appear to have largely nullified the credit objectives of the reform. Nor have transactions produced the desired effect. Because land purchases have often been motivated by a desire to ensure subsistence opportunities for the next generation, or simply for speculative purposes, land which has been sold appears to be less, not more intensively utilized. The reform invited farmers to abandon risk-avoidance strategies without offering alternatives which are viable for most smallholders. As a result, many farmers continue to behave with respect to their land as before, or are responding in unexpected ways. The persistence of traditional inheritance patterns and concerns with family subsistence have resulted in land being further subdivided, often illegally, with most successions going unrecorded in the register. Substantial numbers of sales are not registered. The land titles shown on the register are increasingly at variance with the facts of possession and use.

The studies further suggest that individualization and registration of titles has threatened the security of tenure of women and children and the

"security of economic opportunity" of entire families through rights of disposal conferred on the male head of household. The Land Control Boards which must approve land sales have reacted to this problem by frequently disapproving or qualifying land transactions in ways which have limited the development of a land market and its anticipated benefits. The process of adjudication and registration of titles has itself created insecurity as better-informed and powerful individuals have taken advantage of the uncertainties implicit in this transitional situation to appropriate land. While in areas of rapidly commercializing agriculture such trends may have already been underway, they were accelerated by the reform and in other areas they may have been initiated by the reform.

The studies reviewed in this paper were designed to assess the success of land title registration in achieving individualized tenure and in provoking the anticipated and desired individual and community responses. While micro-studies have their inherent limitations, the several analyzed together here exhibit important consistencies. These studies constitute the only body of empirical research on the results of the reform, and there exists no countervailing body of research which establishes a causal linkage between the reform and smallholder production increases. The linkage was simply assumed on the basis of theory. The studies thus provide an important corrective to the conventional wisdom as to the positive impact of the Kenyan reform and offer important hypotheses to be tested in future research. The challenge for future research is to better isolate, quantify, and explain both the positive and negative aspects of the Kenyan experiment.

11

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Introduction

It is often urged that indigenous African land tenure institutions must be modified and developed to facilitate growth and agricultural productivity. But there is a paucity of empirical analysis of the benefits from land tenure reform. There is no broadly accepted analytical framework for determining the effect of land registration on production and other relevant economic and social indicators. Methodological difficulties abound, including the absence of satisfactory baseline studies and the complexity of distinguishing the impacts of land registration from those attributable to other initiatives. The African case is especially complex in that land registration has invariably (at least in the case of smallholders) been not a means simply of ensuring a secure title but of fundamentally altering the legal basis of the title. Land registration has been the major legal and administrative tool for individualization of tenure and the concomitant attempt to eradicate the remaining vestiges of traditional, "communal" land tenure systems.

The example of a successful African tenure reform most often cited is the Kenyan program of consolidation of holdings, individualization of title and land registration, initiated in the 1950s and still moving towards completion. The rationale for the reform is set out in the 1955 "Swynnerton Plan." Entitled, "A Plan to Intensify the Development of African Agriculture in Kenya," it states that "He [a farmer] must be provided with such security of tenure through an indefeasible title as will encourage him to invest his labour and profits into the development of his farm and as will enable him to offer it as security against such financial credits as he may wish to secure from such sources as may be open to him."¹ The Kenyan reforms unquestionably coincided with major increases in smallholder production in the late 1950s and 1960s, and a causal link has commonly been assumed. The conventional wisdom concerning the reform is typified by a 1974 World Bank report which states that "the implementation and results of the reforms have been quite successful, notwithstanding political friction and a lack of qualified personnel."²

1. Kenya, Office of the Member for Agriculture and Natural Resources, A Plan to Intensify the Development of African Agriculture in Kenya, compiled by R.J.M. Swynnerton (Nairobi: Government Printer, 1955), p. 9.

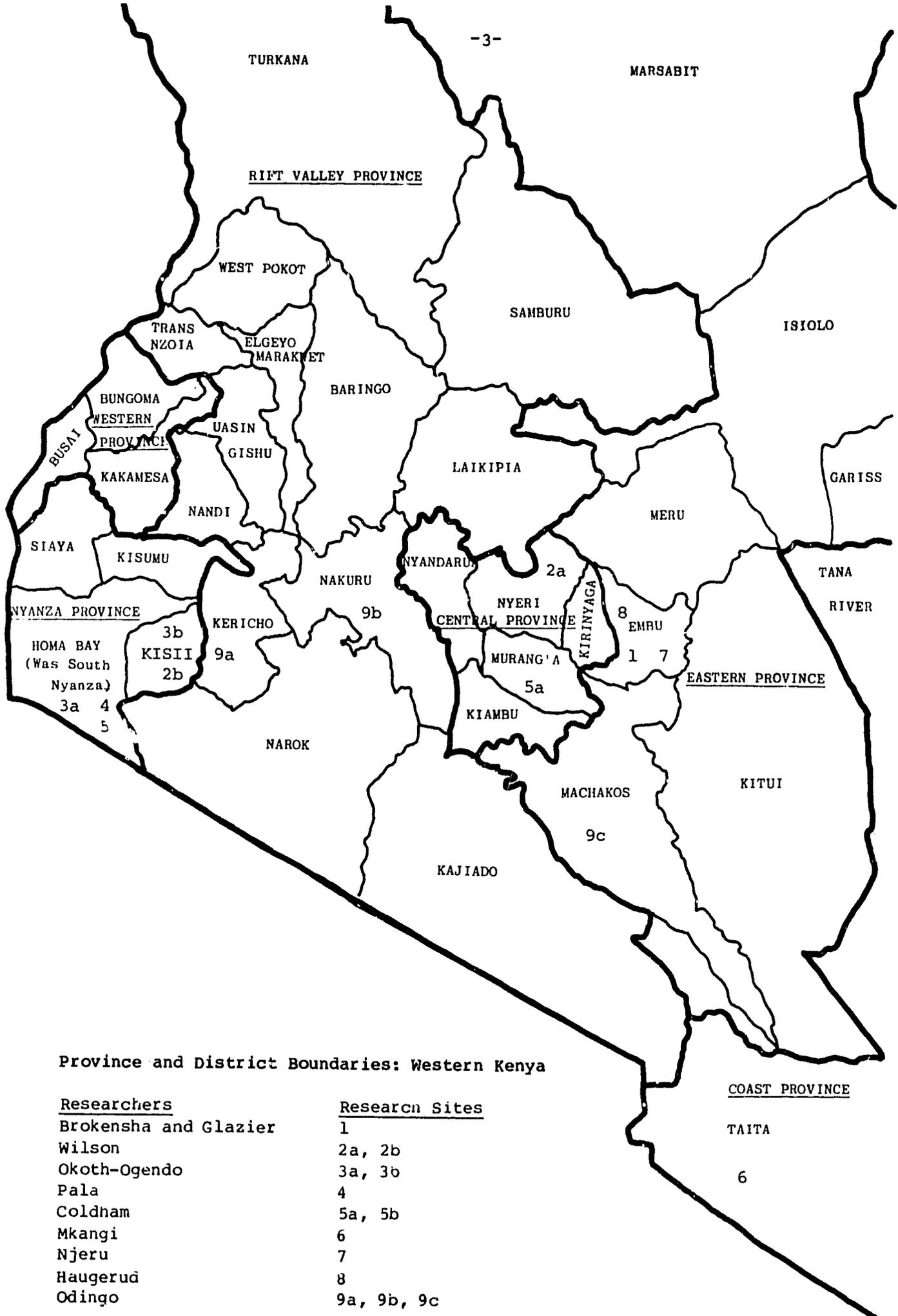
2. IBRD, Land Reform, World Bank Paper, Rural Development Series, July 1974, p. 71.

While a broad-based, conclusive evaluation of the Kenyan reform remains to be done, several important studies have been carried out. These are micro-studies, though a number involve more than one site. They are primarily anthropological and were largely done as dissertation research. They offer valuable insights into the possibilities (and pitfalls) of evaluative research in this area. The generally consistent conclusions and analytical perceptions that have emerged from these studies are highly relevant to the attempts now underway to think through more highly quantitative, formal approaches to evaluation based on larger data sets. The studies reviewed here examine whether the benefits expected to emerge from the registration program have in fact come about, as well as analyze implementation problems and unanticipated effects of land tenure reform. Most of the researchers have tended to focus upon substantiation of the anticipated benefits, and the information on implementation problems and unanticipated effects has emerged in the course of the research. Research design has evolved from sweeping attempts to determine if consolidation, registration, and titling have resulted in all the expected benefits to more narrowly defined analyses incorporating ideas on implementation problems and unanticipated effects.

The purpose of this paper, then, is two-fold. First, it attempts to bring together the evidence from these micro-studies, examining it for consistencies and seeking to explain divergent findings. The net result, as will be seen, should be much greater caution in assuming causal connections between the reform and the increased smallholder production in the post-independence period. Second, it seeks to draw lessons from the research approaches and methods utilized in the micro-studies, lessons which can hopefully enrich and enhance the explanatory value of future research on the impact of land tenure reforms in Africa. The paper begins with a brief review of the studies, then examines the substantive findings on a broad range of impacts: security of tenure; access to credit; fragmentation and subdivision; land markets, accumulation and efficiency in resource allocation; land disputes; investments in agriculture and increased productivity; and security of economic opportunity. Finally, it seeks to evaluate the overall impact of the reform and to draw lessons for future research on tenure reform.

A Review of the Studies

The studies reviewed in this paper can be categorized in several different ways. A chronological overview of the literature demonstrates an increasing sophistication in the analysis; comparisons between ethnic groups and their responses to the implementation of registration might demonstrate how the success of land reform varies with cultural traditions; the authors studied the reform at different points in implementation, which obviously conditioned their hypotheses and methods; and a disciplinary approach distinguishes each paper somewhat, though most of the studies attempt to do justice to the multi-disciplinary nature of the topic. Here, the studies, their authors, locations, and dates are briefly presented in roughly chronological order. A more complete description of the studies and their research methodologies can be found in Appendix A. The study sites are indicated on the map of Kenya on page 3.



Province and District Boundaries: Western Kenya

<u>Researchers</u>	<u>Research Sites</u>
Brokensha and Glazier	1
Wilson	2a, 2b
Okoth-Ogendo	3a, 3b
Pala	4
Coldham	5a, 5b
Mkangi	6
Njeru	7
Haugerud	8
Odingo	9a, 9b, 9c

COAST PROVINCE
 TAITA
 6

David Brokensha and Jack Glazier conducted some of the earliest evaluative research on land registration in Kenya. They studied the Mbere in 1971 during the earliest stages of the land reform. Five years after Brokensha and Glazier's first studies, Enos Njeru instigated another investigation of the Mbere in the Embu District (Mbita sublocation) at which time adjudication (the process of assigning titles) was still in process.

Another significant research site was the Kisii District of Nyanza Province. Rodney Wilson began research there in 1971. The consolidation and adjudication process started among the Kisii in 1964 and was ongoing when the research was conducted. Wilson also collected data for his research from three divisions in Nyeri District in Central Province. Okoth-Ogendo's fieldwork and research followed Wilson's efforts in the Kisii District. He extended his research to a study of the Luo in South Nyanza District (now Homa Bay) of Nyanza Province, where registration proceeded without consolidation in the late 1960s.

Achola Pala Okeya was the next to study the Luo but her research was uniquely focused upon the impact of the land reform on women's agricultural production. She drew from her experience in Nyanza Province in 1973-75. She specifically looked at the East Koguta sublocation, where the registration process spanned ten years from 1964 to 1974, and the East Kadinga sublocation, where the land reform was started as early as 1961. In his 1979 article Coldham examines the impact of registration in Central Province among the Kikuyu.

The authors of the three other research papers considered in this review explored the impact of registration on other areas. George Mkangi studied the reform in the Taita-Taveta District of Coast Province among the Wataita from 1974 to 1976. Angelique Haugerud studied the Embu of Embu District in Eastern Province and her research is unique because the fieldwork for the research was done after the region had experienced twenty years of registration. Richard Odingo did extensive research in the Nakuru, Kericho, and Machakos Districts of Kenya during the early 1980s. His work in the formerly African Reserve areas of Kericho and Machakos have the most relevance for this paper because in those areas tenure was converted from communal holdings to freehold, whereas in his other sites African farmers were settled on land long held in freehold by European farmers.

Expected Benefits of Land Tenure Reform

In areas of Africa organized according to "traditional tenure" relations, a primary objective of registration and titling is the individualization of property rights. The encouragement to agricultural development expected from individualization constitutes much of the benefit expected from a registration project and is, therefore, the focus of research in this area. The economic objectives of individualization in Kenya included increased security of tenure, increased investment, the evolution of a land market leading to the accumulation of holdings in the hands of the most efficient producers, and, ultimately, increased agricultural production.

These are the classic arguments in support of implementing titling programs; however, another category of benefits having to do with the value of creating a land information system should be considered as well. This subset of issues includes the benefits to be gained from the administrative and planning opportunities afforded by an organized record of property rights. A well-maintained registry provides government officials and planners the opportunity to monitor land transfers and distribution, to promote desirable development, and to introduce property taxes.

In Kenya, the reform program also included in its earlier phases the compulsory consolidation of fragmented and often widely separated holdings. Land transactions subsequent to implementation of the reform were expected to achieve further consolidation and promote emergence of a class of African "yeoman farmers" on "economic" holdings. Administrative control of transactions and successions was expected to prevent the subdivision of holdings into contiguous but "uneconomic-sized" parcels and future fragmentation of holdings. Consolidation was expected to reduce perceived inefficiencies in the use of labor and scarce farm equipment occasioned by fragmentation.

Security of Tenure

As with many of the benefits that dominate discussions in the registration literature, security of tenure, increased investment, and credit availability are difficult to consider in isolation as they are strongly interrelated. In addition, "security of tenure" is a general term for several conditions describing the relationship between individuals and their land. Insecurity of tenure occurs when an individual is unsure of his future property rights. This condition can occur under different circumstances, of which the most frequently cited is the absence of enforceable title. There is a threshold issue as to whether security of tenure was in fact a problem in rural Kenya prior to the reform, except in the areas where colonialism and commercialization of agriculture had a major disruptive impact on traditional tenure relations. The studies suggest that responses to the impending tenure reform and conditions brought on by its implementation may have resulted in security problems beyond those that already existed.

Brokensha and Glazier explore the institutional changes brought on, in part, by the impending land reform and, in part, by changing perceptions of land values encouraged by an increasing population and land scarcity--changes which left people without the traditional security afforded by long-established kinship relations and a predictable political organization. The authors look at several changes in Mberere social structure and discuss the implications they have had for security of tenure. Some of these observations are as follows: (1) the power to settle disputes, which was once conferred upon small local organizations, became first the domain of clan elders as larger tracts of land became the basis for conflict and later the duty of an outside authority with as little interest in the outcome as possible; (2) a transfer of authority led to a new concentration of power in a select group of educated elites who had the ability and foresight to manipulate the system in favor of their clans, their lineages, and themselves; (3) a new power structure emerged as land was perceived to increase in value and change was

accelerated with the knowledge of pending land reform; and (4) the organization of the pre-reform political institutions became formalized with a new set of functions and responsibilities. The implication of these changes is the further separation of the individual from kinship responsibilities. Economic uncertainties might have been a major reason for the development of the kinship relations in the first place, but the dissolution of these relationships does not necessarily imply more confidence in the economic environment or changes in decision-making behavior.

It is difficult, however, to distinguish between changes in security of tenure that are due to new market opportunities, land scarcity, or other factors, and those changes that are induced by registration itself. Brokensha and Glazier studied the changing political and social relationships of the Mbere as they were affected by the pending land tenure reform. They document how boundary disputes increased as land became scarce and came to have increased value, using evidence acquired from a review of court records over several years. These authors chose the number of disputes to be representative of changing perceptions with regards to the value of land. They did additional research to determine why land values were changing and documented a variety of causes, including the introduction of cash cropping and the belief that values would increase with the implementation of the pending registration program. This illustrates the problem of distinguishing between changes due to land tenure reform and those due to other factors.

Coldham, too, focuses on increased insecurity of tenure for many of those affected by the registration process. In one of the more unconventional and interesting papers in the literature, he sets about to test his hypothesis that the land adjudication in East Koguta sub-location of Nyanza Province significantly altered customary land rights. He asserts that, initially, adjudication was supposed to do nothing but recognize existing land rights, and in its failure to do so accurately, created more problems than it solved. Coldham comes to the conclusion that the land tenure reform created greater insecurity of tenure for the Luo, citing the growing number of disputes and the confusion over property rights that resulted as people were denied legal recognition of their customary rights to land or as people were extended more rights than they were due.³

Case studies were the primary source of information for this research, but court records of adjudication over land disputes were also reviewed. Coldham approached the analysis of the case studies by looking at incidents where individual interests, stranger rights, and collective rights were in question. He does not attempt to establish the magnitude of the problem he refers to in his analysis of the case studies. A survey designed to do so might have collected data on variables such as the number of disputes involving strangers claiming to have been deprived of their property rights, the number of widows who lost their rights to land through an adjudication process, or the number of land cases brought to court over some period of time. The choice of variables would depend upon the focus of the analysis, but the hypothesis that customary rights are not being documented in the

3. Simon Coldham, "The Effect of Registration of Title Upon Customary Land Rights in Kenya," Journal of African Law 22 (1978): 98, 102.

register and, therefore, rights to land which were previously secure are now undefined would be almost the same for each analysis.

Pala explains how land tenure reform threatens the security of tenure previously guaranteed women by virtue of traditionally defined relationships. Confusion between the legal definition of ownership, which implies "alienation rights," and traditional concepts of ownership, which are implicitly limited to "allocative rights," have confounded the intent of registration, isolated women from the process, and resulted in a complete transfer of land rights to men. A lack of information on technical procedures and the way registration is being administered at the local level have led to further confusion. Many individuals do not understand the implications of registration or how to intervene on their own behalf. Only 6 percent of the women surveyed cultivate land registered in their own name. Although women will probably continue to enjoy their use rights, limited economic opportunities and a lack of readily available land may challenge traditional responsibilities. Pala observed cases where young, unemployed men had sold land registered in their names, leaving their parents destitute. Those women in the greatest danger are women without off-farm incomes, widows, and women with only daughters.⁴ Land reform has also led to the diminution of the socio-economic and legal status of women in their households. Where traditionally it has been the wife's prerogative to decide how parcels and livestock are to be divided among her sons, the land tenure reform has assumed responsibility for this task, thus affecting the natural development cycles of the household, and diminishing women's authority.

Access to Credit

An increase in the number of loan acquisitions is often used as a measure of an increase in investment resulting from the individualization of land tenure. Variables such as the number of farmers with registered holdings who have applied for and received credit, the number of loans made by a bank over the relevant period of time, and the number of loans administered by other sources all provide obvious measures of the impact of registration on credit availability to farmers.

Okoth-Ogendo looks at the credit issue in some depth. His approach to this issue required him to consider four variables: (1) the availability and terms of credit as these evolved from the pre-registration period to the time the fieldwork was conducted; (2) the size and distribution of holdings of those farmers who applied for and received loans; (3) the different sources of credit available to farmers; and (4) the disbursement of loans to small farmers by those institutions. This data allowed Okoth-Ogendo to draw conclusions such as those above about the impact of registration on investments and to generalize about how the project would affect small farmers in the future. His analysis points to the importance of assessing the degree to which other institutional and structural constraints will work to negate possible benefits from registration.

4. Achola Pala Okeya, "The Joluo Equation: Land Reform = Lower Status for Women," Ceres, May-June 1980, p. 39.

Okoth-Ogendo concludes that a title is "little more than a prerequisite for a credit application"⁵ because it is only one of several requirements for a loan by the commercial banks. Thus, although small farmers in Kisii and South Nyanza Districts were given titles to their land, their ability to fulfill the other requirements for a loan was severely constrained. Among the constraints upon small farmers were the credit guidelines issued by the Ministry of Agriculture to the Agricultural Finance Corporation and delays in processing while banks assessed a farmer's credit-worthiness. Okoth-Ogendo concludes that these constraints prevented the expected results of registration from occurring for the vast majority of farmers. Moreover, Okoth-Ogendo suggests, registration had the impact of reducing the amount of available credit in some areas as farmers with sufficient holdings to use as collateral drained the credit market of available funds.⁶ Because of administrative rules favoring farmers with large holdings and those individuals deemed progressive (usually this meant the wealthiest farmers), this subset of farmers was able to obtain credit more easily than ever before. A related argument developed by Haugerud and discussed in more detail at the end of this section is that even though it may appear that credit is being reallocated to marginally better credit risks, leading to marginal increases in production, most new loans are not invested in agriculture.

In the resettled and newly registered lands studied by Odingo, farmers were not interested in using their titles for loan collateral because they were afraid of losing their land. In areas such as Machakos, the threat of repossession is real and the risk of losing land such that farmers resist borrowing from commercial banks and prefer using something other than titles for financial collateral. Odingo found that an unusually high number of the farmers sampled from both the reserve and resettled areas of Machakos (most of the sampled farms were in former reserve areas) had applied for credit (34 percent of the sample) but that only 6 percent had applied to commercial banks. Five percent of the farmers had applied to the Credit Union for assistance but only one had used his land as collateral. Other farmers used future crops and group guarantees in lieu of land. Many farmers acquired Seasonal Credit loans from the Agricultural Finance Committee.⁷ In contrast to Machakos, only 1 percent of the farmers in the resettled areas of Nakuru had applied for credit, and statistics on farmers from the reserves in Kericho show they have little interest in obtaining loans to make long-term investments.⁸ Because it appears that land titles are not being used as

5. H.W.O. Okoth-Ogendo, "The Perils of Land 'Tenure' Reform," paper delivered at the Workshop on Land Policy and Agricultural Production in Eastern and Southern African Countries, Gaborone, 1982, p. 8.

6. Ibid., pp. 12, 14-15.

7. Food and Agriculture Organization, The Dynamics of Land Tenure and of Agrarian Systems in Africa: Land Tenure Study in the Nakuru, Kericho and Machakos Areas of the Kenya Highlands, prepared by Richard Samson Odingo, 1985, pp. 96-97.

8. Ibid., p. 78.

collateral, even when they are available, collateral becomes an important variable to consider when evaluating the impact of land tenure reform on investments.

Besides having the highest percentage of farmers seeking credit, Machakos also has the highest number of farmers to have sought land titles (64 percent of the sampled farmers have legal titles to their land).⁹ It should be noted that the sample site in Machakos which lies near Machakos town and tends to be verging on urban settlement patterns is an area of high absentee ownership and unfragmented holdings, suggesting that parcels may be owned for speculative purposes or that the high loan application rate may just be a characteristic indicative of coffee-producing regions. Perhaps the title does afford greater security and, therefore, encourages some investment, but at the same time, cannot be considered a useful tool for obtaining credit. It is interesting that Machakos is an area of limited agricultural potential, severe population pressure, and subsistence production compared to Kericho, where there is little interest in acquiring titles, quick acceptance of modern agricultural techniques, and relatively abundant land. Further examination needs to be made of the causal relationships between characteristics such as these and the acceptance of land tenure reform.

It is also essential not to assume any necessary connection between increased access to credit and investment in increased production. Haugerud shows that it is necessary to collect data on other variables as well before the real economic impact of registration can be assessed. She points out that unless farmers use the money from their loans to increase their productivity levels, it is not possible to say that increased security of tenure has resulted in increased agricultural productivity.¹⁰ (It is, of course, possible that the credit secured by the land was invested in production on another parcel; but there seems no reason to assume this.) Okoth-Ogendo looks at the total amount of loans secured on land in Kisii and South Nyanza Districts, subtracts from that figure the number of loans not specifically designated as agricultural loans, and concludes that approximately 75 to 80 percent of all loans were put to non-agricultural uses from 1970 to 1974. From this analysis he also concludes that, because significant amounts of money are being put to commercial uses, there can be expected to be a drain on the credit resources available for farmers interested in investing in agriculture.¹¹ These observations suggest that data on how loan money is utilized would be useful for developing a better understanding between security of tenure, investments and productivity. There are other issues as well which could profitably be explored. For instance, is the credit supply elastic, responding to better security for credit with an expansion of credit available to farmers, or has the result led only to a reallocation of credit

9. Ibid., p. 89.

10. Angelique Haugerud, "The Consequences of Land Reform Among Smallholders in the Kenya Highlands," Rural Africana no. 15-16 (Winter-Spring 1983), pp. 82-83.

11. Okoth-Ogendo, "The Perils of Land 'Tenure' Reform," p. 12.

to marginally better credit risks? And have banks in fact been able to foreclose in an expeditious manner on land committed as collateral, so that the banks still regard land as good collateral?

Fragmentation and Subdivision

Excessive fragmentation and subdivision are commonly cited as impediments to agricultural development because of the inefficiencies involved in owning several non-contiguous parcels or plots considered to be too small to be cultivated efficiently. To eliminate fragmentation is to "reduce the time spent walking from one parcel to another; to make it easier for farmers to guard against crop theft, to rotate crops, and to use agricultural equipment."¹² Customary tenure is often said to promote excessive fragmentation and subdivision. The former tends to be blamed on traditional land allocation patterns and the latter on traditional inheritance patterns. Moreover, traditional land tenure limits and perhaps prevents the operation of a free market in land. Promoting the individualization of tenure through registration in Kenya has addressed these problems most immediately through the consolidation of fragmented holdings and the regulation of transactions in land by administrative units called Land Control Boards. The boards were to control subdivision, which was seen as the root cause of fragmented holdings. In the longer term, the creation of a land market was expected to lead through transactions to further consolidation of holdings, and to prevent regrowth of fragmentation.

The Persistence of Subdivision

In cultures where it is the responsibility of a father to divide his holdings equally among his children (or even among his sons), the problem of subdivision can become very severe over time. As parcels are divided into successively smaller units it may become more difficult to use efficient agricultural techniques and productivity levels may be threatened. There is very little doubt that in some areas of Kenya, the rate of subdivision is a subject of legitimate concern. Njeru highlights the inheritance problem by comparing data for three variables collected on the Mbere: (1) the number of men in the area, (2) the number of sons per man, and (3) the number of plots per man. He concludes from this simple comparison that land is already in short supply and that it will be difficult for fathers to continue providing land for their sons as the parcels become smaller.¹³ Even if this is not the most reliable technique for projecting the incidence of subdivisions, it does suggest the problems that occur with increasing land scarcity.

Subdivision not only is perpetuated by inheritance practices but is exacerbated when landowners sell off segments of a single holding. Like other conditions leading to subdivision, this is only considered a problem when

12. Haugerud, "The Consequences of Land Reform," p. 72.

13. Enos Hudson Nthia Njeru, "Land Adjudication and its Implications for the Social Organization of the Mbere," Land Tenure Center Research Paper no. 73 (Madison: Land Tenure Center, 1978), p. 17.

productivity levels are adversely affected. Wilson examined this problem by collecting data on the size of parcels traded in transactions entailing subdivision and the size of remaining unsold segments. He concluded from the data that a farmer rarely sells more than 30 percent of his or her plot, always leaving enough land to provide subsistence.¹⁴

Okoth-Ogendo observes that as land transfers have increased it has meant an increase in the subdivision of parcels. He notes that in Kisii, where consolidation took place prior to registration, this trend is particularly obvious. He asserts that "the market is responding more to non-agricultural cash demands and (in the case of subdivisions) perceived landlessness in society than to commercialized farming."¹⁵ Thus farmers sell part of their holdings in order to acquire money for immediate cash demands such as school fees and purchasers want to assure that family members will not become landless--they are not interested in consolidating an agricultural enterprise.

The registration of subdivisions has been particularly unsatisfactory. Failure to maintain a valid record of successions has been cited as one of the major disappointments of the Kenya program. The absence of updated records can be a catalyst for disputes because of confusion over legal property rights and can undermine the value registration has for planning purposes. Odingo points out that it would also be easier to control uneconomic subdivisions if all titles were issued.¹⁶ The reasons commonly cited for subdivisions not being registered include the lack of incentive or motivation to register successions, fear that the request to subdivide a parcel will be denied by Control Boards, and impatience with the cumbersome process required to register a succession.¹⁷ It would be interesting to conduct research to determine which reason for not registering successions is most prevalent.

Haugerud discusses two problems related to the registration of successions in Embu District, where she observed that the subdivisions estimated to have occurred are not reflected in the registry. With regard to their initial registration, she asserts that registration is postponed while people attempt to solve disputes over titles and property rights with the situation being exacerbated by costly litigation procedures. She also points out that after a series of unregistered successions has taken place, there is an increase in the number of disputes as family members attempt to exercise their discretion over a plot but are constrained because the plot is not registered in their name.¹⁸ She does not document how she comes to these

14. Rodney J.A. Wilson, "Land Control in Kenya's Smallholder Farming Areas," East African Journal of Rural Development 5 (1972): 18.

15. Okoth-Ogendo, "The Perils of Land 'Tenure' Reform," p. 37.

16. FAO, Land Tenure Study, p. 99.

17. See Haugerud, "The Consequences of Land Reform," p. 33; and Simon Coldham, "Land-Tenure Reform in Kenya: The Limits of Law," Journal of Modern African Studies 17 (1979): 619.

18. Haugerud, "The Consequences of Land Reform," pp. 73, 76-77.

conclusions, making it difficult to assess the magnitude of these claims, but her work does suggest the importance of registering all titles once registration is initiated.

As mentioned in the introduction, it is somewhat premature to address the issue of the success of registration in providing a resource to utilize for better development planning because most registration systems are far from complete. The failure to register successions and transactions is clearly undermining the reliability of the register as a statistical source and planning tool in the most fundamental way.

The Persistence of Fragmentation

Haugerud notes the persistence of fragmentation in the wake of the reform. She contends that the practice of the borrowing and lending of parcels has been responsible for the increase in the fragmentation of holdings that she observed in Embu District.¹⁹ She gathered data on two variables to give an indication of the prevalence of this practice: (1) the number of parcels borrowed, lent, or both by each household; and (2) the number of parcels owned by each household. Her sample survey of households was conducted in two different production environments, allowing her to note differences between tenure patterns in the cotton and coffee zones. Her observations indicate that this parcel exchange is continuing and even accelerating as the population puts strains on scarce land resources. She concludes that the consolidation administered in Embu District was ineffective as fragmentation of the newly consolidated holdings began soon after the reform took place.²⁰ Haugerud's research suggests that people engage in the risk-averse practice of cultivating multiple holdings to protect themselves against the whims of an unpredictable climate and disease. Spreading the risk of cultivation over several plots counters the costs of fragmentation.

The Role of the Land Control Boards

Wilson considers the role of the Land Control Boards in preventing fragmentation and subdivision and their effectiveness in regulating transactions. As Wilson states, "A primary aim [of the Control Boards] was to ensure that the land tenure structure evolved in a way which did not prejudice rural economic development."²¹ The boards were supposed to achieve this objective by preventing "uneconomic transfers," including the sale of plots determined to be too small to be cultivated efficiently.

Wilson looked at data gathered from the records of the boards and registries in Kisii District of Nyanza Province and reports on observations made of the actual board proceedings. He approached the problem by asking an array of questions regarding land transactions and collecting data on the

19. Ibid., p. 76.

20. Ibid.

21. Wilson, "Land Control in Kenya's Smallholder Farming Areas," p. 124.

number of transfers that had taken place within the district since registration, the size of the parcels transferred, whether or not the parcel sold was part of a larger parcel, and if so, the relative sizes of the parcels created by the subdivision and the location of the bought parcel in relation to the purchaser's other holdings. This information was used to assess whether or not the boards had been successful in preventing individuals interested in purchasing land from acquiring small parcels at an unreasonable distance from their other plots. He found that even though the land transfer application asked whether or not the land in question was contiguous with the farmer's other holdings, the boards did not seem to take this factor into consideration when reviewing the transfer. This was in spite of common knowledge that "distant holdings are seldomly intensively developed."²²

Similarly, Wilson discovered that because of social pressures the boards seldom denied applications for land transfers that involved further subdivision--an event that could also lead to fragmentation when viewed from the perspective of the buyer. He notes that buyers were usually unable to purchase lots adjoining their original parcels, meaning most transactions created another instance of fragmentation.²³

Wilson approaches the problem of evaluating the effectiveness of the boards by comparing the nature and number of the actual transactions to what would have been allowed if the boards had adhered to the standards under which they were supposed to be working. He observed the actions of the boards, noting the infrequency with which they prevented the subdivision of a parcel, even if it meant the creation of parcels of an "uneconomic size." Social pressures guaranteeing everyone access to land were blamed for the boards' failure to follow the standards.²⁴

Wilson concludes by questioning the policies for control as they were outlined by the boards, as well as the boards' ability to administer the controls. He contends that a modification of the policies and more attention to enforcement of those policies are necessary for the materialization of the expected benefits from the reform program. He suggests that there should be stronger controls against fragmentation because of the economic inefficiencies.²⁵

Okoth-Ogendo comes to similar conclusions after reviewing the board minutes and observing actual hearings. He finds the boards guilty of "benevolent paternalism" because they are more concerned with social responsibility than economic realities.²⁶ The board members almost always

22. Ibid., p. 134.

23. Ibid., pp. 131, 137.

24. Ibid., p. 131.

25. Ibid., p. 139.

26. H.W.O. Okoth-Ogendo, "African Land Tenure Reform," in Agricultural Development in Kenya: An Economic Assessment, edited by Judith Hayer, J.K. Martha and W.M. Senga (Nairobi: Oxford University Press, 1976), p. 174.

took into consideration the impact a certain transfer would have on other family members and looked for their consent before approving the sale. Okoth-Ogendo observed several circumstances where disputes were settled on the basis of customary law instead of according to what was recorded in the register, but he also observed instances where an attempt was made to adhere to the new land law. These contradictory examples point to the inconsistencies created by the confusion with regards to the applications of the legal concepts brought in with the reform.

Some Problems in Research Approach

The studies suggest a number of cautionary points concerning collection of data on parcel ownership for the purpose of examining problems of fragmentation. It is important to realize that registry records may yield unrepresentative data because the records do not accurately reflect property rights as they exist, given the pattern of land use. For example, a farmer may be cultivating parcels registered under several different names. It is apparent from evaluating the fieldwork done so far that cross-referencing the names of registered landowners and their parcels with a list of parcels collected through a survey, where both the cultivator and the registered owner are identified, would help to establish the degree of divergence between the register and what is actually happening on the ground.

The methods used to study the issue of subdivision are very similar, and sometimes indistinguishable from those outlined for fragmentation. The data on who cultivates what parcel would be useful for identifying the incidence of the problem. For example, land registered in the name of a person, now deceased, and cultivated by remaining family members would be an example of an unregistered subdivision and could be identified by the cross-referencing technique mentioned above. Haugerud discovered that one-fifth of the sample households in her survey were cultivating land registered under someone else's name.²⁷ It is not completely clear what percentage of these people were cultivating land they had inherited in an unregistered succession compared to land they had borrowed.

None of the researchers reviewed attempted to conduct a survey to determine exactly how many actual subdivisions had taken place since the implementation of the land tenure reform. Mostly they relied on comparison of registered subdivisions with projections based on probable rates of population growth. Counting the number of registered subdivisions in the land registry files usually yielded a number far below what would have been expected to have taken place since the project's implementation. They compared data on the number of registered titles, the number of original titles for which subdivisions were recorded, and the number of subdivisions registered. A comparison of the percentage of registered subdivisions to original number of titles gave a figure that was compared to projected figures on the rate of subdivision estimated on the basis of population growth. It would be useful to perform a sample survey in the appropriate areas to determine if the actual rate of subdivision is as extreme as projected and to establish to what extent successions are not being recorded.

27. Haugerud, "The Consequences of Land Reform," p. 74.

Land Markets, Accumulation and Efficiency

One of the most frequent arguments in favor of registration is that a "modern" land market will emerge which, in time, will lead to the accumulation of parcels in the hands of the most efficient farmers. Traditional tenure patterns are often criticized for inhibiting development by discouraging land sales. Some evidence exists to suggest the problem is not as serious as it might seem. Land records in Nyanza, Central and Eastern Provinces show that land sales occurred prior to registration, indicating that the conditions of tenure were not totally prohibitive of land sales before the reform. Land exchanges in clan controlled areas also included sales to individuals from other kinship groups. Brokensha and Glazier cite examples of the Kikuyu, Embu, and Meru purchasing land in the Mbere division prior to the completion of registration. Similarly, Haugerud's description of the Embu custom of lending and borrowing land demonstrates that a land market in the western sense is not the only means by which ambitious farmers can gain access to additional parcels of land. Even so, most of the studies examine the impact of registration on local land markets.

The methods chosen to study this aspect of the reform vary somewhat depending on the emphasis of the fieldwork. Some researchers limit their analysis to a few variables believed to prove that registration has not resulted in the emergence of a land market while others do a more comprehensive analysis. Wilson and Njeru have surveyed the registries and other records of transactions to determine if there has been an increase in the number of transfers since the onset of registration.

If there is no evidence of an increase in the number of transfers then it is important to ask why. Njeru's analysis of people's perceptions of the reform offers some insight into what might be the barriers to the full emergence of a land market. He asks questions such as, what are good reasons for selling land and what are people's opinions toward people who sell land for quick cash? Similarly, Okoth-Ogendo assesses the farmers' perceptions of the nature of land rights, suggesting that a land market did not develop because farmers had not adopted the sense of ownership implied by the individualization of tenure. He approaches this subject by surveying a group of farmers to determine the relationship between registered owners, occupiers, and the land upon which they reside, using concepts of value and lineage ties as indicators of attachment. From the surveys, he concludes that registered farmers did not have a concept of land values and did not really consider selling land an option. Likewise, a survey of individuals occupying land registered in someone else's name revealed the almost unanimous belief that the registered owners had a moral obligation not to exclude them from the land.²⁸

These results suggest several alternative approaches that might be used to evaluate the success of registration in stimulating a land market and the accumulation of holdings. First, an increase in the number of transactions

28. Okoth-Ogendo, "The Perils of Land 'Tenure' Reform," pp. 20-22.

from the onset of registration over some period of time is clearly an indicator of an emerging land market. An increase in the number of land transactions, if established, confirms the development of a land market, but there is also a need for a broader examination of the impact of land tenure reform on land transactions. As Haugerud points out, it was the knowledge of pending registration and not the implementation of the program which provoked sales in her study area, most of which took place before registration had been completed.²⁹ Her observation suggests that it was the educated elite who understood the implications of registration and took advantage of the situation to acquire additional land. This implies that the temporary increase in sales that took place when registration was initiated was not sustained and was not a sign of a developing agricultural land market. Consulting only the registry for land transfer information would not have resulted in a complete picture of events because many pre-adjudication sales were not registered, and the survey would not have highlighted the fact that a high percentage of the total transfers since the beginning of reform took place during the earliest stages of the reform.

Haugerud also considered several distribution issues. In order to analyze the distributive effects of these sales and inheritances she asked the farmers when they had acquired the land, how they acquired it, and how it was being utilized. In addition, she put together farmer profiles by asking questions about the level and source of their incomes and the reasons they had for acquiring land. This work led her to conclude that land was accumulated during the implementation of registration as opposed to later and that land was acquired as a speculative asset--not as a productive asset.³⁰ Those acquiring land were distinguished by at least a partial income from outside agriculture. Wilson also assembled profiles of people dealing in land and came to similar conclusions.³¹

Haugerud is the one researcher to address the efficiency issue directly. She examined how many parcels of land, purchased since the beginning of the land reform, were being productively used. She shows that these parcels were less productively utilized than those not so transferred, which casts doubt as to whether the land market/efficiency scenario is playing out as anticipated. To establish whether there has been a net increase in production, it would be preferable to establish how the land was used prior to its sale and to make a comparison between the level of productivity before and after the parcel was sold.

Mkangi presents evidence that the land market in Taita Hills is accelerating. He does not deal directly with this trend's relationship to productivity but rather explores some of its immediate and future

29. Haugerud, "The Consequences of Land Reform," p. 80.

30. Ibid., p. 80-83.

31. Rodney J.A. Wilson, "Land Tenure and Economic Development: A Study of the Economic Consequences of Land Registration in Kenya's Smallholder Areas," Journal of Statistical and Social Inquiry, vol. 22, no. 3 (1972), pp. 12-14.

consequences. Mkangi examined the pattern of land transactions within the entire Shigaro-Sungululu sub-location and found that out of the twelve registered units in the area, six had gained land and six had suffered net losses from 1969 to 1975.³² Figures representing the net gains and losses of the smallest and largest holdings show comparatively large gains for those individuals with the most acreage and a gradual dissolution of the smallest farms. Since on the average the poorest households have the highest number of household members, the smallest holdings and the least access to off-farm income, there is a high possibility that parcels will be subdivided to the point where reconsolidation is necessary. It is clear that such extreme subdivision and the accompanying fragmentation of use rights will diminish productivity and increase the level of poverty.

Individuals on both sides of the land tenure reform debate accept landlessness as an inevitable outcome of an accelerating land market. Mkangi discusses problems which emerge as selling land becomes an option. People in the poorest stratum of society are tempted to sell their land to meet immediate cash needs because of limited access to other resources and are without access to an alternative "economic opportunity" because of scarce employment opportunities. Mkangi also observed a tendency for poorer people to sell their land to finance their children's education, which is considered an entrance to a better level of existence. Most of these students, however, face unemployment upon graduation because they tend to enter school later than other children, have problems catching up, and do not fare well in the hierarchical grading system and, therefore, provide few returns for their parents' investments.³³

The work of Brokensha and Glazier offers another perspective on land markets. Their 1973 article provides insights into the changes that take place within the kinship groups in pre-capitalist societies that are required to facilitate the development of a land market. They include the reorganization of kinship groups and alteration in individual perceptions with regards to land. The institutional restructuring includes changes in the distribution of power between groups and individuals and in the ability of different authorities to settle land disputes. The changes in perception are provoked by both internal and external forces, with increasing population pressure creating a situation of scarcity and the anticipated land reform altering the meaning of property rights.

As alluded to by Brokensha and Glazier, understanding the nature of land sales is helpful to any analysis of land markets (i.e., sales of clan land may proceed very differently from sales of individually owned land).³⁴ Also, an upward trend in the number of sales does not necessarily lead to the desired

32. George C. Mkangi, The Social Cost of Small Families and Land Reform (Oxford: Pergamon Press, 1983), p. 121.

33. Ibid., pp. 114-120.

34. David Brokensha and Jack Glazier, "Land Reform Among the Mbere of Central Kenya," Africa 43 (1973): 192.

conclusion that a land market is developing and increases in productivity are soon to follow. The land involved with the transfer may not have been put to agricultural use or the land may have been sold to wealthy individuals from outside the region who only purchased the land as an investment.

To identify trends such as these, data should be collected on the number of land sales and the buyers and sellers. This should include a profile of both parties which would include their ethnic background, income levels, and relationship to each other. In addition, it would be useful to question whether or not the buyer comes from a region where a registration system is in place. Information such as this would have implications for research on what impact implementing a registration system in one region has on other areas where the reform has not been tried. (Registration may mean people from other regions will be drawn to the project area because they can buy holdings, thus increasing the population pressure in the area.)

There is a final issue of considerable importance, raised by Wilson, whose findings on the impact of the Land Control Boards on land transactions have already been discussed in the section of this paper on fragmentation and subdivision. While one of the objectives of the Control Boards was to see that transactions did not lead to further fragmentation of holdings or subdivisions creating uneconomic parcels, a further objective was to prevent ill-considered sales of land which would leave families landless and destitute. Wilson's conclusions are not clear in this area of concern, but his study raises an important question: has the Kenya program both created a tenure system conducive to land transactions and at the same time imposed a system of control of transactions which constitutes such a drag on the land market that it cannot produce the more efficient resource combinations anticipated? This remains a critical area for future study.

Land Disputes

The problem of property disputes appears frequently in these studies. Disputes can be classified in several different ways but one of the most useful is their relationship to the different stages of land reform. A first category includes disputes well prior to registration. These were thought to have a high opportunity cost and so their adjudication was considered one of the benefits of registration. A second category of disputes includes those which appeared just prior to and during the reform, as knowledge of impending registration brought long-standing boundary conflicts to the surface and as people moved to define their property rights before registration took place. A different kind of dispute emerged some years after the land reform as attempts at land transfers revealed inconsistencies and incomplete landownership records, as well as misunderstandings of the consequences of registration. It is useful to analyze trends in the number of disputes in terms of when they occurred relative to both the implementation of the reform and the catalysts that provoked them.

Trends in the number of disputes may be measured by gathering data on the number of conflicts requiring legal action, surveying a sample population and asking how many of them have been involved in disputes over some period of time, or asking for opinions on whether or not there has been an increase in

the number of conflicts since the onset of registration. Njeru used this last technique and concluded that there had been an increase in the number of disputes, mostly due to dissatisfaction with the way adjudication had been carried out. Njeru's technique is probably a necessary component in any analysis of disputes because modes of dispute settlement change with registration and there may not be records of pre-registration disputes. The only way to gather the necessary information on such conflicts, though its reliability may be questioned, is to interview individuals regarding land disputes in which they have been involved.

Wilson focused on the boundary disputes that existed before the reform, hypothesizing that adjudication would solve all boundary conflicts, leaving nothing to dispute. He collected data from the old African court files and the registries that indicated a considerable amount of money was being spent on land dispute settlement prior to the reform. An analysis of 61 land cases brought before one of four courts in the Kisii area in 1963 revealed that the majority of cases (46 percent) were over boundary disputes, with the remainder divided between transactions and land stealing.³⁵ Wilson assumed that registration would adequately and accurately register rights in the land, and that new conflicts would not arise in the future. He did his research early in the registration process and failed to predict the institutional problems that ensued.

Brokensha and Glazier also conducted their research in the earliest stages of the reform; however, their approach was different and yielded more interesting conclusions. They focused mainly on the changing nature of disputes and shifts in who had the authority to settle disputes. Their work is particularly interesting because it provides a good example of how social relationships and traditional authority change with impending land reform. They conclude that as disputes became more frequent people began to trust traditional authorities less because of the authorities' natural bias toward their own clans or kinship groups. However, as the authority to settle disputes became further removed from the local community and traditional authority structures, there was more of a chance that traditional interests in land would not be respected or understood, thus causing additional conflict.³⁶ This has been one of the primary unanticipated side effects of the reform.

Like Brokensha and Glazier, Njeru is concerned with how social and political relationships change with the coming of land registration. He gives an example of how people no longer stop to talk casually in the village because of distrust that has been made manifest by the boundary disputes. Njeru points to the increasing number of conflicts and explains, to some extent, the rationale behind them,³⁷ but he fails to establish whether or not this trend will continue to accelerate or if it will subside as the

35. Wilson, "Land Tenure and Economic Development," p. 21.

36. Brokensha and Glazier, "Land Reform," p. 197.

37. Njeru, "Land Adjudication," pp. 22-27.

confusion created by this institutional reform diminishes. It has been suggested that the reform dredges up existing but dormant conflicts; this raises a question of whether observations of increasing disputes at registration are in fact indicative of the long-term impact.

Coldham's hypothesis that the increase in the number of disputes observed among the Kikuyu and the Luo was evidence of the insecurity created by problems with the implementation of the land tenure reform has already been discussed under the section on security of land tenure. However, it is appropriate to mention it again in this context because it serves as an example of how conflicts can emerge after registration has been completed due, in part, to institutional conflicts and to administrative error. Even more important, it suggests that many registrations involve faulty or partial understanding of their consequences by those concerned, and lack legitimacy in their eyes. There is then great potential for future disputes.

From the examples above it is evident that before accurate interpretations can be made concerning the impact of the program on land disputes, there will be a need for more information than just the number of disputes occurring and whether that number is increasing or decreasing. It is important to know the nature of the disputes as well. For instance, if the conflicts are over boundaries, the distinction between types of boundary disputes could be useful (e.g., is the dispute over boundaries between garden plots or between large segments of clan land?). The nature of disputes may change. For instance, there may be an increase in the number of disputes, but the nature of the conflicts may change from disagreements over boundaries to conflicts over property rights.

The most common type of disputes cited involves boundaries. Three explanations are usually given to explain their increase: (1) population pressures are causing land to become more scarce; (2) land is perceived for the first time to have a value, or the value is thought to be increasing; and (3) people attempt to control more land when it is believed that registration is pending. The research to date does not offer impressive approaches to this problem. The number of disputes is simply measured, with the interpretation varying according to the author's hypothesis. Future studies should be very careful to define the nature of disputes to be measured and should identify other independent factors that could influence the data (e.g., the building of a road can raise land values and result in an increased number of disputes, independent of the reform).

Investment in Agriculture and Increased Productivity

One assumption underlying the advocacy of individualization of tenure is that it will increase an individual's security over the long-term use of his holdings, thus improving incentives for investment in greater agricultural production.

The productivity issue is intimately related to all of the topics already addressed and is central to the discussion of land tenure reform. The issue is particularly difficult because it is hard to determine to what extent increases in productivity over a certain period have been due to land

registration and to what extent they have been due to other causes. In Kenya the many new programs and opportunities which accompanied independence have made this distinction especially difficult.

Through observation, Pala and Mkangi have identified two agricultural spheres where production has been affected by the land reform. Pala discusses women's primary role in land use decisions and cultivation. About one-third of the women interviewed by Pala cultivated some land for which they were not "the recognized users . . . by virtue of their position as lineage wives."³⁸ They acquired this land through the exchange of plots for production purposes, not through permanent exchange. If the land reform inhibits parcel exchanges, it could damage a production system dependent on access to various plots in different regions. As women are isolated from land allocation decisions by the registration process, land use strategies are bound to change.

Mkangi identifies changes in the spheres of food production and consumption. Individuals in the upper income strata have different strategies for meeting their subsistence needs than people in the poorer strata. Households with higher levels of income tend to produce a higher percentage of their own chakula³⁹ and purchase a higher percentage of their supplementary foods such as mboga. Poor households have insufficient land for meeting their basic chakula needs and, with the coming of the land reform, have also been forced to increase their purchases of mboga. These families used to be free to collect the weeds that make up low-quality mboga.⁴⁰ Land reform restricted access to areas where the plants grew, forcing families with little off-farm income to purchase supplementary foods in the marketplace. This implies forced changes in production strategies with the redistribution of incomes and, according to Mkangi, is proof that the individualization has not helped to make poor houses self-sufficient in food production.⁴¹ Both Pala and Mkangi show that the productivity question can and should be viewed from many angles if the true effect of land reform is to be understood.

The researchers whose work is reviewed here have not attempted before/after or with/without studies of either levels of investment or productivity. The compulsory and systematic nature of the reform program, coupled with Kenya's considerable ecological and ethnic diversity, will have made identification of acceptable control areas very difficult, while adequate baseline data from before the reform were rarely available. Haugerud comes closest to measuring productivity when she compares productivity of land subject to land transfers with productivity of land not transferred, though she is testing the validity of the hypothesis that a land market leads to more

38. Achola Pala Okeya, "The Joluo Equation," p. 39.

39. Chakula is basic food usually made from maize-meal, and mboga is a complementary dish to chakula made from plants, vegetables, or meat.

40. Mkangi, Small Families and Land Reform, p. 105.

41. Ibid., p. 112.

efficient production, rather than the overall impact of registration on production.

Results from Odingo's research suggest that titled land is not being utilized productively. He points to "absentee ownership" as a serious threat to productivity levels in adjudicated areas, explaining that the land reform program over-emphasized ownership at the expense of use. In Machakos, absentee ownership was found to be as high as 81 percent of the total holdings sampled (this is in an area where most farmers own a single parcel). In Kericho, 32 percent of the holdings are managed by people living elsewhere. Odingo does claim that there has been a perceptible improvement in farming methods which promises to help increase production levels in the long run despite the apparent resistance to making long-term investments, but he fails to show the causality between these improvements and registration.

Finally, it is pertinent to ask: increased production for whom? Even if it is a goal of the project to increase production, the benefits from the increase may not fall to the subset of the population targeted in the project design. Njeru's survey of individuals' attitudes toward land tenure reform suggests that it is those in a position of power because of the pre-reform social hierarchy and distribution of wealth who benefit most from such reform. There is no study available, however, which systematically explores the distribution of the benefits of the reform. Research to date has focused upon whether any of the anticipated benefits have materialized, and only as a result of that research have unanticipated effects of the program been recognized.

Security of Economic Opportunity

The complexities involved in the term "security of tenure" need to be explored further and related to another variety of security, security of economic opportunity. Security is multifarious; its important characteristics change with institutions and infrastructure. The research suggests that the reform may have created more insecurity than security of tenure because of the extent to which it disrupted methods for coping with land scarcity. The insecurity created by the reform is neither quantifiable nor directly comparable to the security of tenure that may have resulted from issuing titles. Many insecurities have emerged because considerable confusion is created when one property institution, derived from English law, is superimposed upon other, traditional property forms which function under a different set of assumptions. Insecurity is a problem when individual tenure in an undeveloped economy provides less economic security than that afforded by other tenure institutions.

Two types of security are pertinent to this discussion. Security of land tenure is one of the expected benefits from registration and titling but it is apparent that only those individuals designated as title holders benefit from the reform. By definition, individualization implies that the community loses control over land. In practice, however, it has also meant that individual members of subsets of the population will lose their access rights to land either during or as a result of the registration process. Examples include: (1) individuals (particularly wives) with cultivation or other use rights

which are ignored and obliterated during registration; (2) children who can no longer be assured of inheriting a piece of land to cultivate; and (3) landless individuals within the community who can no longer rely on kinship ties for a plot to provide for their subsistence. The sub-populations in the last two examples are really suffering more from what Bruce refers to as a loss of "security of access to an economic opportunity"⁴² than from insecurity of land tenure.

Coldham focuses considerable attention on the insecurities created by registration and titling. As mentioned earlier, his work is based on the premise that registration was intended to record accurately existing rights to land but failed to do so. He examines whether individuals have been deprived of rights to land and/or have had conferred upon them greater rights than they had before the reform, and he uses the results as a measure of the insecurity created by the reform. Coldham does not try to quantify the losses or gains of rights to the land, but relies on an analysis of case studies to confirm his hypothesis. Other authors have alluded to the fact that customary rights are denied and ignored during the registration process, but Coldham points out that there is also a problem of misrepresentation of rights.⁴³

Overall Impact of Land Tenure Reform

Two broad questions must be asked regarding the consequences of a reform such as that in Kenya.

First, are the asserted benefits of the reform likely to materialize, or are they illusory? Contrary to the hopes and expectations of the proponents of the Kenya land registration project, the evidence from these studies demonstrates that benefits are by no means inevitable; few have surfaced and then only to a select group of individuals. The registry is not functioning properly and the people have little appreciation for the reform.

Second, do the benefits from the reform outweigh the undesirable side effects that seem to occur as a direct result of a registration project? Okoth-Ogendo argues that "whatever contribution tenure reform may have made to growth in that country [Kenya] has been completely offset by the redistribution of political power, emergence of economic disparity, and the disequilibrium of socio-cultural institutions that have occurred in rural society as a consequence of reform."⁴⁴ While not everyone will agree with this assessment, it quite rightly stresses the breadth of factors which must be considered in any evaluative study. Consideration must be given to the

42. John Bruce, "Land Tenure Issues in Project Design and Strategies for Agricultural Development in Sub-Saharan Africa" (Madison: Land Tenure Center, University of Wisconsin, 1986), p. 31.

43. See, for example, the problem of defining a widow's right: Coldham, "Effect of Registration," p. 101.

44. Okoth-Ogendo, "The Perils of Land 'Tenure' Reform," p. 2.

effect of registration and titling on the distribution of wealth, institutional reorganization, and labor utilization. Registration is designed to affect structural change through the stimulation of a land market--a change that may still lead to landlessness for many and the accumulation of large holdings for others.

Some of the economic and political disparities that can occur with registration are discussed by Njeru. He observes that the Mbere perceived increasing inequity between the elites and the less influential farmers with the coming of land tenure reform.⁴⁵ Inequalities were thought to increase as the elites in the village took advantage of their position and knowledge to gain permanent rights to lands not previously theirs. The Mbere also perceived an increase in landlessness and an overall decrease in the quantity of land held by small farmers. Njeru points to another area of concern, noting that with titling came an increase in the number of disputes over boundaries. Whereas earlier, disputes could be resolved by tribal authorities, after the reform they required official litigation proceedings. Only those people with money could afford to bring their claims to court, and the least wealthy people were often forced to sell some or all of their land to pay their litigation fees. Still others were forced to concede part of their land to avoid adjudication and the chance of losing their entire holdings.⁴⁶

As is generally understood, total equality did not exist prior to land tenure reform. Mkangi acknowledges that disparities existed, particularly with regards to the distribution of land, but he claims that "the tenure system which existed then was endowed with mitigatory factors which successfully hid the intra-strata level (and inter-strata) uneven land distribution so well that it never became a mechanism for differentiation."⁴⁷ While the land reform process minimized the efficacy of social institutions based on reciprocity and kinship responsibilities, it has concurrently made it easier to differentiate between households on the basis of their land holdings "thereby turning the phenomenon of unequal distribution of land into a differentiating variable."⁴⁸ A comparison of the average per capita holding for male children between the poorest and the richest strata (.5 acre and 3.4 acres, respectively) illustrates the extent of the problem. Land is a differentiating variable in agricultural societies and becomes a characteristic defining class. (High incomes are highly correlated with large land holdings.) Class disparities are further accentuated by policies and

45. Njeru, "Land Adjudication and its Implications for the Social Organization of the Mbere." LTC Research Paper No. 73. Madison: Land Tenure Center, University of Wisconsin, November 1978, pp. 16-18.

46. Ibid., p. 19.

47. Mkangi, The Social Cost of Small Families and Land Reform, p. 84.

48. Ibid., p. 84.

programs which tend to favor households with higher incomes.⁴⁹ Mkangi is even more concerned with the process of individualization which has transformed a community-centered society into isolated nuclear families who engage in trivial disputes and are concerned with individual materialism rather than community needs.

No tenure reform can be evaluated divorced from the development strategy pursued. The Kenyan reform was planned in the 1950s in the context of development economic theory which emphasized industrial growth and foresaw a flow of inexpensive labor (the landless) into urban/industrial employment as a necessary concomitant of development. This theory has proved seriously flawed. The industrial development which has taken place has proved unable to absorb significant amounts of labor, and the need to absorb increases in the labor force in the agricultural sector has become abundantly clear. Land policy in Kenya does not appear to have adjusted to take these differences into account.

In conclusion, it must be acknowledged that many of the trends which are perceived by the researchers as negative impacts of the reform may already have been developing prior to the reform and may only have been accelerated by the reform. To have avoided those impacts would have required a different reform, rather than simply not carrying out the reform which was implemented. Given this, the question may be whether the reform has been premature for most areas of the country and most farmers, imposing social and economic costs which were not clearly anticipated while failing to deliver the expected changes in farmer behavior because other, non-tenurial pre-conditions for those changes have not yet been fulfilled. Perhaps the instigators of the reform in Kenya should have explored more evolutionary land tenure reform policies which would have moved institutions closer to individual tenure while minimizing such problems as landlessness. A primary research objective for other countries considering a major land tenure reform in areas where the economy and institutions have not developed enough to warrant total reform should be to explore alternative evolutionary land tenure reforms. Kenya's challenge now is to rectify the problems created by its reform and to create flexibility in future land policy decisions.

Lessons for Future Research

The Kenya research offers a number of insights which should be useful in framing future research on registration/production relationships, including research which seeks larger data sets from broad surveys for more formal analysis.

These microstudies required imaginative research approaches. A comparison of the situations before and after the reform was not usually possible because of a lack of baseline data (especially data on investment and

49. C. Leys, Underdevelopment in Kenya; The Political Economy of Neo-Colonialism 1964-1971 (London: Heinemann, 1975), p. 101, cited in Mkangi, p. 85.

production levels) from a period unaffected by the reform. The compulsory and systematic nature of the reform, plus Kenya's ethnic and ecological heterogeneity, made it difficult and perhaps impossible to identify satisfactory control areas for "with/without" studies, studies of areas between which the only significant distinction is implementation of the reform program. In these circumstances, the researchers showed considerable ingenuity in focusing on more readily testable intermediate links in the argument from reform to increased production (e.g., the assumed positive relationships between farmer access to credit and investment in agriculture, and between a land market and accumulation of land in the hands of more efficient producers). Their research results have, by casting doubt on those links, placed in question the assumed ultimate impact of land registration on production. It was a particularly appropriate approach in a situation in which increases in production had clearly occurred, and it was causality which was at issue: how far could the substantial increases in production in the years following independence be attributed to the reform program, as opposed to the many other post-independence changes in agricultural policy? It is also an approach with considerable explanatory power--it does not simply demonstrate a positive or negative correlation between registration and production, but provides at least a partial explanation for why the hypotheses and projections which underpinned the reform program have not played out as anticipated. This approach to defining issues for testing is perhaps the single most interesting aspect of the Kenya research.

There are also a number of more specific cautionary lessons which emerge from the Kenya studies:

1. Before/after studies should be aware of the ambiguities involved in baseline data. The tenure situation will have been changing, evolving, before the reform. It may well have been evolving in the direction pursued by the reform, and it may have been altered significantly due to rumors of the impending reform, as with land sales in anticipation of implementation of the reform. Any assessment which compares the post-reform situation with the pre-reform situation at a single moment in time may be misleading.

2. Registration of individual ownership is usually expected to negate community rights, but it often also (intentionally or inadvertently) extinguishes traditional rights of other individuals. Increased security for the registered owner may mean greater insecurity for other users, who may after the reform use the land only at the sufferance of the owner. Those other users, as in the case of farmers' wives in Kenya, may be critical producers. An adequate research design must include such producers, as well as those registered.

3. Lack of a mortgageable title is only one constraint on farmer access to commercial credit, and provision of such a title may have little impact on most farmers, who cannot meet other standards of "credit-worthiness." It may in fact result in a draining of the credit market by the relatively few who meet the necessary standards, leaving less credit for others. Or banks may alter lending practices to require such a title, disadvantaging those with less satisfactory security who had nevertheless previously been able to obtain loans. The implications of land security for credit should be examined in such a manner as to make clear the different impacts on different groups of farmers.

4. Higher levels of lending secured by the new titles do not necessarily translate into increased agricultural production. Borrowing may be for consumption purposes or for investment outside of agriculture. Increased lending to farmers should not be accepted as proof of either greater investment in agriculture or an impact on production.

5. Subdivision upon inheritance appears to have continued unabated, with attempts at restrictions being avoided through non-registration of successions, undermining the reliability of the register. The imperative to share the family holding among all heirs is clearly still strong, often stronger than the felt need to have an accurate, up-to-date register. Research must be alert to the possibility of a gap between the register and reality, and seek to determine its nature and dimensions.

6. The resurgence of fragmentation through land borrowing in the wake of the consolidation program suggests that fragmentation has risk-minimizing functions which are more important to many farmers than the potential advantages of consolidation. It is essential that research begin to examine not only whether potential benefits are realized in terms of new production strategies, but also the negative effects of reform programs on existing farmer production strategies.

7. The operation of the land market has not resulted in the transfer of small, inefficient holdings to more efficient producers as anticipated. Land purchases have often involved subdivision of a seller's parcel, and usually dealt with land not contiguous to any of the purchaser's other parcels. Fragmentation of holdings thus increases by virtue of the land market. Moreover, land purchases seem to be motivated less by a desire to expand or intensify production, and more by a desire to invest in an appreciating asset and to ensure against landlessness in the next generation of the family. Purchases appear to be funded from savings generated outside of agriculture, and to result in not more, but less, intensive land use. Research must seek to quantify such phenomena and seek a better understanding of the incentives to which farmers are responding.

8. It cannot be assumed that prior to registration more efficient farmers were unable to obtain additional land. In fact, land borrowing provided considerable flexibility in this regard and may continue to be the preferred method even after land sales become possible.

9. Registration dredges up old land disputes and perhaps occasions some new ones, resulting in quite a high level of disputes during registration. Thereafter disputes may decline for a time. Research which assumes that such a decline is lasting may mislead. If the reform program has altered tenure but failed to alter perceptions about land, that discrepancy can be expected to generate a significant increase in land disputes some years after the registration.

10. Both benefits and problems created by the reform must be examined from both short-term and long-term perspectives, though data may be obtainable only for the short-term. An example: we know now that the Kenyan reform created greater insecurity of tenure for women because their husbands can now sell the family land; but we do not yet have a sense of what the reform may

mean in the longer term to Kenyan women, who are now able for the first time in most areas of Kenya to purchase and own land in their own right.

More generally, it cannot be stressed too strongly that registration programs in Africa involve not just providing a secure title to an individual holder whose title has been ambiguous (as is often the case in Latin America and Asia), but fundamental tenure reform. In Africa, registration is historically a tool for individualization of tenure, and will usually need to be evaluated as part of that process. It provides greater security in a given parcel of land but also involves an end to a tradition of free access to land. As noted earlier, security of a different kind is lost: security of access to a production opportunity. Tenure reform also undermines traditional authority structures and can contribute to growing social anomie. An assessment of registration's impacts must examine a very wide range of social and economic relationships in order not to mislead.

Finally, it is clear from the Kenya studies that the baseline situation cannot be treated as simply the negative (e.g., "insecurity of tenure") of the positive ("security of tenure") benefits expected from the reform. The prior tenure system met important risk-avoidance needs and food security objectives of the farmer. Those needs and objectives may continue to be as important to many farmers as the opportunities for increased commercial production presented by the developing market economy. Their gains and losses in moving between the pre-existing and proffered tenure systems must be evaluated carefully. As one views the studies presented here one is constantly aware of the resiliency of older production strategies--strategies very different from those postulated for Kenyan smallholder agriculture by the planners of the reform, strategies which are consistent with pre-reform tenure institutions. It is clear that many farmers are "listening to a different drummer" than the incentives offered by the market economy, choosing instead risk-spreading, subsistence-protecting strategies. So long as those strategies seem more appropriate to farmers than those posited by the reform, farmers tend to continue to deal with their land much as they did prior to the reform, or pursue old objectives through new ploys developed to take advantage of new situations created by the reform.

What are the implications of the above for research planning? The suggestion is not that future research should adopt the methods of these microstudies where funding is available for collection of larger data sets. Instead, it is that future studies aim for comparable and even superior explanatory value. This should take as the point of departure that traditional production strategies and behavior with respect to land still offer risk-avoiding, subsistence-protecting advantages to farmers, and that in the case of many farmers these will be more valued and indeed more sound economically in the short term than those offered by more risky production-increasing strategies. On the other hand, it is not very instructive to simply conclude that many Kenyan peasant farmers have "rejected" the reform and the agricultural strategies which accompany it. If agriculture offers reasonable returns, the strategies for increased production should appeal to some farmers, in particular to those who have an alternative safety net, such as an income from outside agriculture. It is suggested that future research will achieve serious explanatory value only when it is able, on the basis of detailed analysis of household resource endowments and alternative household economic strategies, to explain the choices made by those households as they acquire, manage, and dispose of land.

APPENDIX: DETAILED REVIEW OF THE STUDIES

Some of the earliest empirical research on the impact of registration was conducted by David Brokensha and Jack Glazier in Mbere Division of Embu District in Eastern Province. The research area is southeast of Mount Kenya and is primarily made up of three ecological zones with varying capacities for agricultural production. Some tobacco is grown in the most fertile areas and cotton in the second zone altitudes, with the third zone being utilized for grazing. The population in this region nears 50,000, with 90 percent being Mbere. Because of erratic climatic conditions and poor soils, the Mbere were economically less advanced than some of their neighbors and, therefore, were late to be considered for adjudication. Because of the low level of agricultural and economic activity in Mbere the colonial government generally ignored the area, meaning that at the time the research was conducted, the tenure relationships and other institutions of the Mbere had held together more strongly than those of neighboring areas.

Glazier conducted research in the area from July 1969 to August 1970 and Brokensha from July 1970 to August 1971. The 1968 Land Adjudication Act, No. 35, was applied to the Mbere Division in August 1970, and Phase I of the reform (the demarcation of boundaries) was still in process when Brokensha completed his field studies in 1971. Because implementation was in its initial stages at the time Brokensha and Glazier conducted their fieldwork, they focused primarily on the institutional changes produced by the impending land reform. Brokensha and Glazier give little information on the research methods employed, but extensive non-sample interviews designed to study the history and nature of the land tenure relationships among the Mbere people appear to have been the primary tool.

Rodney Wilson conducted his research at approximately the same time as Brokensha and Glazier but in a different region and with a more strongly economic focus. His research concentrated on the divisions with registered holdings in Kisii District of Nyanza Province, where registration had begun in 1965 and was ongoing during his fieldwork in 1970-71. He also collected data in three divisions in Nyeri District in Central Province, where the registration process had already been completed. A consolidation program was implemented in both areas before registration was implemented.

Wilson's primary source of data was a sample survey conducted in Bassi-Boitangare sub-location of Kisii District. Out of the 385 farmers in the district determined to be landowners, 77 individuals were chosen to be interviewed with an emphasis on those who had been dealing in land.¹ By

1. Rodney J.A. Wilson, "Land Control in Kenya's Smallholder Farming Areas," East African Journal of Rural Development 5 (1972): 124.

focusing interviews on those farmers who had been involved in land transactions, Wilson biased his survey toward a group of farmers who were probably elite in terms of economic or political power and who were presumably not a representative sample of the population in the community. The sample selection may have been justified because Wilson's primary concern was to evaluate the ability of the Land Control Boards to regulate land transactions. Other sources of data included the land registries, interviews with officials of the commercial banks and government credit agencies, and observation of Control Board meetings.

Okoth-Ogendo has written several papers on the impact of registration on land tenure in Kenya. He conducted his research in four areas in Kisii and South Nyanza Districts of Nyanza Province between 1972 and 1974. Adjudication and consolidation started in 1964 in Kisii, an area dominated by the Kisii. Adjudication and registration were undertaken without consolidation in the Luo-dominated South Nyanza (now Homa Bay) District in the late 1960s. By 1973, registration had been completed in all four study areas.

Collecting data from two districts allowed Okoth-Ogendo to make interesting comparisons regarding the dynamics of responses to consolidation and registration. A good example is the comparison he makes between the rate of fragmentation in a district where consolidation took place and in districts where registration proceeded without consolidation. Okoth-Ogendo used a variety of resources to gather data with which to study this issue and others. He collected data through contacts with bank and loan officials and by observing the proceedings of two Land Control Boards, one in each of the districts studied.² Small sample surveys were also conducted.

Achola Pala Okeya also studied the Luo but her research was uniquely focused upon the impact of the land reform on women's agricultural production and their relationship to the land. The research was conducted from 1974 to 1975 in Nyanza Province, which stretches along the northeastern shores of the Nyanza Gulf of Lake Victoria and is divided into South Nyanza, Kisumu, and Siaya Districts. Land abstracts had been filed for all the parcels in the area, but title deeds had not yet been issued. This primarily anthropological study involved participant and non-participant surveys, observations and interviews. Considerable information was obtained through a survey of 135 women that included open-ended and standardized questions about acquisition, use, and control of land.

Simon Coldham has published several articles on the impact of consolidation and adjudication in Kenya focusing mainly on Nyanza and Central Provinces. Coldham conducted his research from 1973 to 1975. His fieldwork included a small sample survey conducted for the purpose of determining if subdivisions were being registered; however, he focused most of his attention on an analysis of court cases and other recorded disputes. In his 1979

2. H.W.O. Okoth-Ogendo, "The Perils of Land 'Tenure' Reform." Paper presented at the Workshop on Land Policy and Agricultural Production in Eastern and Southern African Countries, Gaborone, 1982, pp. 36-37.

article, Coldham examines the impact of registration in Central Province among the Kikuyu and in the Nyanza Province among the Luo. In both regions adjudication and registration took place in the early 1960s. In a 1978 article on the effects of registration upon customary rights Coldham mostly limits his analysis to a study of the Luo in the East Koguta sub-locations of Nyanza Province with reference to information from neighboring East Kadianga.

Both East Koguta and East Kadianga are situated on the Nyabondo Plateau, where the beneficent climate and the good soils have made it possible to establish a relatively prosperous farming community. Prior to adjudication, East Kadianga was fairly advanced economically and had already exhibited signs of a move toward individualized tenure. Because of this, certain areas within this sub-location were among the first to be adjudicated. The consolidation and registration program was started as early as 1961 and many areas were completed by the mid-sixties. East Koguta was far less developed economically and so adjudication did not begin there until 1964 and the register itself did not open until 1974.

George Mkangi is the only author to have conducted fieldwork in the Taita-Taveta District of Coast Province among the Wataita. His work was conducted in the Taita Hills, where variations in altitude create various climatological and ecological zones with varied productive potentials. The area can be divided into three agricultural zones each with its own important resources, such as grazing lands, wood for charcoal, and fertile soils. A considerable area in the region is held as national parks. Because Taita Hills was considered a high potential area, it was among the first to be considered for registration. The reform began in 1969 in the Taita Hills.

Mkangi's objective was to study the problems of population control and land reform in the context of general social welfare of the Wataita. To do this he had to incorporate several diverse techniques into his research methodology in order to examine labor utilization, food production and consumption, demographics, education, and family planning. Mkangi conducted a census, interviews, observations, and case studies of 16 households in the sub-location of Shigaro-Sungululu. The household sample was stratified into four groups according to income, size, and other factors, and used to compare land distribution patterns, the consequences of land sales, and social stratification.³

Enos Njeru chose to do his analysis of the impacts of registration on the Mbere of Mbere Division (Mbita sub-location) of Embu District of Eastern Province, in the same general area which had been studied a few years earlier by Brokensha and Glazier. He conducted his fieldwork from 1975 to 1976, during which period the adjudication was still in process. The basis for his analysis was a sample survey. He randomly selected 40 landholders from a list of 158 adult males, then added the names of key individuals in the community

3. George C. Mkangi, The Social Cost of Small Families and Land Reform. (Oxford: Pergamon Press, 1983), pp. 10-11.

and the names of local government and tribal officials. Out of a total of 57 with whom interviews were sought, 46 were finally interviewed.⁴

Angelique Haugerud's study is unique because the fieldwork for the research was conducted after the region had experienced twenty years of registration, providing an opportunity to observe how the program had affected a community over time. Her fieldwork was conducted among the Embu of Embu District of Eastern Province, in the area of Mt. Kenya. The Embu number 180,000, with approximately 9 percent of the group living outside the district. Compared to the neighboring Kikuyu, this is a small and homogeneous ethnic group. The population is dispersed over several ecological zones where cotton, coffee and tea are the primary agricultural crops produced.

Haugerud conducted research in the Embu region using household surveys, participant observation, and structured and unstructured interviews from August 1978 to May 1981. A random sample of 83 smallholder households (5 percent of the population), divided between two agro-economic zones, was the basis for the analysis. For the most part, those interviewed were female and male household heads and their spouses. Selected households were chosen publicly by drawing names in a process similar to a lottery. A household was defined to include "those individuals who occupy and manage a given farm parcel and who share production and consumption activities associated with that and sometimes additional parcels."⁵ Notable individuals within the community were interviewed as well.

In the early 1980s Richard Odingo conducted fieldwork in three districts in the highlands of Kenya with different ecological, agricultural, and tenurial characteristics.⁶ He surveyed farmers in Nakuru, where significant numbers of Kikuyu were resettled on formerly European farms. This region is experiencing a major decline in productivity and, consequently, is moving toward subsistence agriculture. Kericho, an agriculturally productive area most of which had in the colonial period constituted an African Reserve, was chosen as the second site. Land scarcity is not an immediate problem for the Kipsigis in Kericho, who have successfully adopted cash crops and improved farming methods. Registration was concluded in Kericho in the 1970s. The third set of samples was taken from the Machakos District, where both resettlement areas and formerly subsistence areas can be found. Machakos is heavily populated and suffers from severe land shortages, marginal lands, and

4. Enos Hudson Nthia Njeru, "Land Adjudication and its Implications for the Social Organization of the Mbere," LTC Research Paper no. 73 (Madison: Land Tenure Center, University of Wisconsin, 1978), p. 7, footnote 5.

5. Angelique Haugerud, "The Consequences of Land Reform Among Smallholders in the Kenya Highlands," Rural Africana, no. 15-16 (Winter-Spring, 1983), p. 87.

6. Richard Samson Odingo, "The Dynamics of Land Tenure and of Agrarian Systems in Africa: Land Tenure Study in the Nakuru, Kericho and Machakos Areas of the Kenya Highlands." Study prepared for the United Nations Food and Agriculture Organization. Rome: FAO, January 1985.

rapid land deterioration. While all three areas have been consolidated and registered, certain areas of Machakos have unusually high numbers of farmers who have actually acquired their titles.

Odingo's paper concentrates on the research results from the districts which were formerly part of the African Reserves because the land tenure reform issues in the resettled areas are inherently different. His methodology was apparently limited to sample surveys. Odingo chose a total of 102 sample farms from the Kericho District primarily from the Belgut and Buret Divisions, but also from the settlement areas of Chepsir, Kipkelion and Sotik. He also surveyed 123 farms in Machakos randomly selecting samples from towns within easy access of Machakos Town. Odingo collected large samples from all three districts to insure a mix of ecological zones. The survey questions were designed to assess the dynamic changes in land tenure and agrarian systems caused by rural development and land tenure reform.

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