

Kural Africana, No.

Winter '75-76

Done

PH 1000 680  
10005

## WOMEN FARMERS AND INEQUITIES IN AGRICULTURAL SERVICES

Kathleen A. Staudt

Department of Political Science  
Grinnell College

It has become fairly commonplace in recent years to comment on the bias in agricultural policy that exists against women farmers in much of Africa which, paradoxically, occurs in a setting where women do most of the agricultural labor and indeed even manage entire farm operations. Not only have women assumed heavier work loads in rural agricultural areas, but many observers note an increasing dependency of women on men because of the commercialized economy and the inequitable ways in which the fruits of development have been distributed (for example, see Boserup 1970, Mbilinyi 1972, UN/ECA 1974, Tinker and Branson 1976).

Despite the increased awareness about inequities, we have little empirical data that establishes to what extent discrimination occurs, why it occurs, and the consequences of discrimination both for women's productivity and the general economy. My purpose in this paper is to provide empirical support for the hypothesis that the government gives preference to men in agricultural services. I then proceed to explore why such discrimination occurs by examining a number of factors that could possibly account for it. Women are perhaps perceived as "traditional," conservative, poverty-stricken, and unwilling or unable to adopt crop and husbandry innovations that are promoted by the agricultural administration. From a bureaucratic and economic perspective, discrimination might be seen as the most efficient use of scarce resources if preference is extended to those farmers with the cash, land, and propensity to innovate. Such farmers might have a greater likelihood of adopting crop and husbandry innovations promoted by the agricultural administration. As will be evident from the analysis, the legitimacy of that bureaucratic perspective is highly suspect; even wealthy and innovative women managers with relatively large tracts of land experience bias in the receipt of agricultural services relative to their male counterparts. The failure of bureaucrats to extend services to women managers, particularly those women with the material resources and ability to respond to innovations, is a telling critique of bureaucratic performance and ability substantially to alter agricultural productivity. A large part of the bureaucracy's clientele who are women are, in effect, ignored. While women are very much a part of general development activity, they are not integrated into the development service network.

### RESEARCH SITE

The data, collected in 1975, consist of a geographically stratified sample of 212 small-scale farm households in an administrative location in Kakamega District of western Kenya. For purposes of the study, farms were

divided into two types: female management and joint management, which are farms with a man present. Joint management includes both husband-wife households and households where intergenerational management occurs because land has not yet been parceled out to sons. Kakamega is a densely populated area where rates of male out-migration in search of wage employment are among the highest in Kenya. A full 40 percent of my sample consists of women farm managers, and this closely corresponds to figures in the 1969 Kenya Census, which show a 36 percent female household headship for Kakamega. A common pattern in Kakamega, as elsewhere in Kenya, is for men to engage in wage employment away from the farm and return home upon retirement.

Research was done among a subgroup of the Luhya people, whose social organization is both patrilineal and patrilocal. Women traditionally have done much of the agricultural labor; they were responsible for digging in connection with land preparation, planting, weeding, and harvesting. Men traditionally cleared the land, plowed with oxen, and cared for cattle; they also help with work operations in the women's sphere but are not totally responsible for them (Wagner 1949; Sangree 1966, p. 100vi). Men who work outside the district sometimes "work with money," by sending their wives cash to hire laborers to plow or to buy seeds, fertilizer, and tools. Farms are small in scale, and the average size for the entire sample is two and one-half acres.

Women engage in extensive associational activity including church groups, mutual-aid societies, and communal agricultural groups for planting, weeding, and harvesting crops. More than 90 percent of the women in the sample belonged to some type of organization. A good deal of agricultural information and labor is exchanged among members of these groups. Men, in contrast, attend barazas, weekly meetings in which government announcements and judicial decision making occur. Occasionally at barazas agricultural information, advice, or demonstrations are given by the extension staff. While women are not prohibited from attending barazas, they rarely do so because of custom and lack of time.<sup>2</sup> These separate gender-based communication patterns have important consequences for the transmission of information between agricultural field staff, who are almost all men, and the female members of their rural clientele.

#### AGRICULTURAL SERVICES

Agricultural services in Kenya are of several types. The most common is the visit by an agricultural instructor to farmers, all of whom are equally entitled to such visits. Instructors advise farmers about husbandry practices and new crops that are being promoted by the agricultural department, as well as provide information about other services. Visits are most usually initiated by the instructor rather than the farmer and consume the largest proportion of the duties of an agriculture instructor, though only about twenty farms are visited per month according to a study done in western Kenya (Leonard 1973a, p. 144).

The instructors with extensive contact with farmers work at the location and sublocation level, the latter being the smallest administrative unit in Kenya. There is generally one instructor for every 1,000 to 2,000

farm households in Kakamega District. Instructors usually have a primary-school education and between one to two years of specialized training in agriculture, depending on their age and the year they entered the agricultural service. Since instructors generally live in or near the area they serve, they know the local people fairly well. Instructors also provide training in the form of demonstration plots in which a group of ten to fifty farmers is lectured on the use of fertilizers or planting in lines. In the area when I carried out my research, this technique was infrequently utilized, with, at best, one demonstration per growing season.

Training centers for farmers are located in every district in Kenya. The training consists of a one- to two-week course on such topics as cattle husbandry and the growing of coffee and vegetables. In my research area farmers perceive training as "by invitation only" (from agricultural instructors or local administrators), though among young farmers there was an increasing awareness that it is a service to which they are entitled.

In the annual agricultural reports at the district and national levels, approximately one-third of the trainees are reported to be women. A closer examination of courses reveals that they are generally found in home-economics courses in which a primary thrust is domestic rather than agricultural advice. Lessons include a wide variety of topics such as cookery, child care, sewing, health and sanitation, nutrition, home management and improvement, and vegetable gardening. Although courses in home economics provide valuable information, the agricultural aspects are significantly diluted and comprise, at best, 30 percent of the course. And while courses are supposedly for all women, in practice they tend to be restricted to certain categories, the most predominant being for "chief and assistant chief wives" and "agricultural staff wives."<sup>3</sup>

Loans are available to farmers in the form of an advance called a Guaranteed Minimum Return (GMR) for maize seed and fertilizer, and in cash from the Agricultural Finance Corporation (AFC), a parastatal body. A land-reform program initiated by the colonial government and implemented by the independent government has created a system of individualized land ownership. Farmers can use land title deeds or wages as sureties for acquiring loans.

In recent years there have been a number of questions raised about the extension model of agricultural service delivery, whereby instructors visit farmers and provide them with support services. In the first place, extension officers appear to concentrate to a large extent on the wealthy and influential farmers (alternatively called "progressive" farmers) to the detriment of the less wealthy and poor farmers. While wealthy farmers may be more able to withstand risk and experiment with new crops, analysts find that an additional large segment of farmers can similarly withstand risk, yet they are relatively ignored by the administration. It appears that the least needy farmers receive the most services (Leonard 1973b, Ascroft et al. 1972). A second problem revolves around the capability of instructors. In a survey administered to extension personnel in the Western Province of Kenya, Leonard found a 46 to 72 percent range of accuracy on technical points related to particular information which the Ministry of Agriculture was attempting to convey to farmers (Leonard 1973a, p. 134). This suggests that it may be unwise for farmers to rely solely on instructors who may transmit incorrect information or information which contradicts other instructors.

Despite these problems the extension model is still considered the most viable technique for providing information designed to increase agricultural productivity. Many crop and husbandry innovations have been successfully introduced through extension agents including the use of oxen for plowing, the growing of hybrid maize, and planting in straight lines. Moreover, this study found that there was a high degree of association between farmers who adopted a number of innovations promoted by agricultural agents and the receipt of agricultural services. It is difficult to say, however, whether agricultural instructors were initially responsible for that innovativeness or whether instructors subsequently supported innovative behavior.

The government's orientation towards women has varied since early colonial times. A statement from Kenya's 1929 Annual Report illustrates an underlying assumption about female farmers in the evolution of agriculture. It quotes Lord Lugard, whose words were dogma for many colonial policy-makers: "Since men alone tend oxen in Africa, the result, as I have elsewhere said, will be to replace female labor in the fields to a large extent" (Kenya Colony 1929, p. 57).

Early colonial policies tended to be directed at men through a predominantly male extension service. In the late colonial era there was some effort to incorporate agricultural services into community development work which concentrated on women. Since independence, however, there has been no explicit recognition of women's role in agriculture, nor any particular orientation to women, with the exception of the home-economics program which was initiated in the last decade. Home economics as a department is so recently established and so sparsely staffed that its impact is necessarily diluted. In Kakamega District there are approximately 300 field workers in agriculture but only three or four assistants in home economics. This means that the extension staff is, for all intents and purposes, male. Even if more home-economics assistants were available, agriculture only constitutes a minor part of their activity, and women's agricultural needs would still remain unserved. While community development had a significant agricultural component in its policy during the late colonial era, it has in the last decade concentrated on community self-help activities, sports, and adult-literacy classes. Therefore, the extension service is the primary means by which the government channels information to farmers in an effort to increase agricultural productivity.

The distinction between cash crops and food crops is not a useful one in Kakamega. Maize and beans represent the most significant food and cash crops and are grown both for family consumption and for sale. Within the last decade hybrid maize was introduced to the area and is now utilized by all but a few farmers. In contrast to local maize, which provides about six bags<sup>4</sup> per acre, hybrid maize has the potential to provide more than thirty-five bags per acre if fertilizer and the proper husbandry techniques are utilized. In practice, farmers generally double their output with the use of hybrid maize. Coffee was also introduced to the area in the 1950s, though it is grown by less than 15 percent of the farmers in my sample. Other farm and crop innovations include passion fruit; "European" vegetables such as cabbages, onions, and tomatoes; and grade cows which double the daily milk output. Agricultural instructors are engaged in promoting new crops and

productive practices associated with these innovations.

### PATTERNS OF SERVICE DELIVERY

In this section three types of agricultural services will be examined for the extent to which these services are differentially distributed to women and men. These three include visits from agricultural instructors, training, and loan acquisition. A visit is the most common service, while training and loans represent the more valuable services in terms of cost to the government benefits to the farm.

Though a small number of farmers ask instructors to visit their farms, most visits are initiated by the instructor. Since agricultural instructors are men, there is a problem in transmitting information to a female clientele, many of whom manage farms alone while husbands are working elsewhere. Conversations between women and instructors who are not related by kinship could arouse suspicion, particularly when husbands are absent.

Farmers were asked whether their farms had ever been visited by an agricultural instructor, and the results are tabulated in Table 1.<sup>5</sup> The data show that female-managed farms are significantly less well served than are jointly managed farms. About half the farms managed by women have never been visited in contrast to only a quarter of the jointly managed farms. It appears that a man's presence has drawing power to agricultural instructors making home visits.

Table 1--AGRICULTURAL INSTRUCTOR VISITS BY FARM-MANAGEMENT TYPE

	Female Managed	Jointly Managed
Farm Never Visited	49%/42	28%/36
Farm Visited at Least Once	51%/43	72%/91
		N = 212
	(Yules Q: .42; Signif.: .01)	

It is also important to consider the situation of women in jointly managed farms. There are several distinct husband-wife work patterns in joint management: some have husbands employed locally who may take a managerial interest in the farm; others have husbands who work on the farm; still others have husbands who have failed in job seeking, dislike farming, and spend most of the day away from the home. Due to these variations in life situations, many women are in fact alone at the farm during the day when agricultural instructors visit. For the jointly managed farms, I asked whom the agricultural instructor spoke with, and a common response was "whoever is there"--and that most frequently is the woman. When the husband is present

during a visit, there is a variety of communication patterns that occur, depending on the personalities of the couple and the agricultural instructor. While the general norm is for the husband to speak and to represent the household, this does not necessarily mean that the woman leaves the discussion or maintains silence. As such, women in jointly managed farms may have more frequent and direct contact with agricultural instructors. It is difficult to determine, however, whether or not the quality, intensity, and duration of the communication between an instructor and a lone woman, one whose husband is away for the day, compares favorably with that between an instructor and husband. I suspect that it varies as well with the personal style of the people talking. It is important to bear in mind that many middle-aged to older women have a strong sense of personal efficacy and considerable prestige, derived from their reputation as hard-working farmers and mothers of many children. Thus, with increasing age, the potentially problematic nature of communication between women and instructors becomes less important.

Another indicator of services is attendance at a farmer training center. Sessions vary in length, usually lasting one to two weeks. Though highly subsidized by the government, a fee of Shs. 10/50 (approximately \$1.50) is required and this is a sizeable sum for farmers without a regular cash income. Training represents a direct and intensive service for farmers, as it is long in duration compared to other services and makes available highly qualified teachers. Agricultural instructors or local administrators generally invite farmers to these training sessions, though it is possible for farmers to request training. Courses are not well publicized, which means that many farmers are unaware of the availability of training.

The nearest training center is a five- to fifteen-mile trip from most farms in the sample and has been open since 1923. Table 2 shows the results from the sample on training by type of farm management. (By training, I mean a person has completed a course at the farmer training center.) The most striking finding is the overall low level of training, given the proximity of the center to farmers. Aside from that, great disparities exist between female and joint management, with a fourfold greater likelihood of training for the latter. Clearly, as a vehicle for training in agriculture, centers are not serving women.

Table 2--FARMER TRAINING BY FARM-MANAGEMENT TYPE

	Female Managed	Jointly Managed
None in Household Trained	95%/30	80%/102
One or More Household Members Trained	5%/4	20%/25
		N = 211
	(Yules Q: .66; Signif.: .01)	

Husbands are often wary about wives being away for extended periods of time, and, in some cases, the chief or assistant chief must persuade husbands to allow their wives to attend. For women managing farms alone, a one- to two-week training period presents special problems. They must arrange that day-to-day household responsibilities and cultivation be provided for while they are away. In the eighty-four female-managed farms in the sample, only four women had ever had any training. Of the twenty-five jointly managed farms where some member had attended a training course, six of those trained were women, and the remainder, husbands or sons. In a number of cases where sons were trained, they have since moved away from the farm and found employment as cooks and watchmen. In several cases where husbands were trained, it was evident that the men were old and, for all practical purposes, retired from active farm work. The invitation to be trained appears to be a status-conferring mechanism for some farmers. Nonetheless, it is still an activity which requires motivation on the farmer's part because it requires a good deal of time and financial commitment. Such examples illustrate the waste involved in training extended to a precious few. There is more likelihood that trained women will remain on the farm and engage in farm work than trained men. Most women are full-time farmers both in the sense of the number of hours they work daily and of the continuity of farm work throughout their life. Men, in contrast, tend to seek outside employment during youth and middle age and retire to the farm when old.

The ability to acquire a loan is a crucial indicator in any assessment of agricultural services. Information about loans and contacts with knowledgeable people are important resources in learning how to obtain a loan. Information about the loan procedures comes from associating with agricultural instructors and local administrators, attending barazas, and participating on committees. These contacts, knowledge, and experience denote a kind of sophistication and an ability persuasively to argue one's case, be it for a loan or something else. Contacts and influence are solidified by blood and clan ties; and women, who are relatives only by marriage (the practice of exogamy), do not have access to those kinds of ties. Women are, moreover, informally discouraged from publicly participating in barazas and frequenting bars and beer clubs.<sup>6</sup> They participate on development committees as token representatives but have only minimal access to situations where influence and assertiveness are acquired. Additionally, as previously documented, women have less intensive contacts than men with agricultural personnel.

To acquire a loan, one must have either a title deed to land or a regular salary to serve as sureties.<sup>7</sup> Title deeds are for the most part held in the husband's name, and wage employment is more readily available to men, who are more educated and have a wider array of employment options than women. Therefore, if a woman wants a loan, she must persuade her husband, who then puts up a guarantee in the form of a title deed or salary. If husbands are not regularly at home, or are not interested in the farm, this may be difficult to arrange. The only genuinely independent women for loan purposes are widows who can arrange legally to have the title deed transferred to their names (a process much more complicated and costly than for the male). The few women who do purchase land are usually employed in the government or the schools, but they are few indeed given the population

density and the high cost of land in that area. Putting title deeds in male names, a result of land reform, has solidified male control over a powerful resource, and this has obvious implications for acquiring other resources as well.

Table 3 shows if the respondents knew anything about loans, about loan procedures, or had actually received a loan, by type of farm management. What is very evident is the extremely few loans--only three--acquired by the 211 households, and these loans went to jointly managed farms. I inquired from farmers whether or not they had ever applied for a loan or knew how to do so, and an additional small proportion could correctly relate the application procedure.<sup>3</sup> Quite significantly, only one of the nineteen households that had either received a loan or been aware of the application processes was female-managed. That particular woman was not only wealthy, but was linked to the local power structure by membership on the development committee, marriage to another committee member (though absent), and an in-law relationship with the local politician.

Table 3--LOAN INFORMATION AND ACQUISITION BY FARM-MANAGEMENT TYPE

	Female Managed	Jointly Managed
Knew Nothing About	99%/83	86%/109
Knew Application Process or Had Applied for Loan	1%/1	12%/15
Acquired Loan	--	2%/3
		N = 211
	(Gamma = .86; Signif.: .01)	

Clearly, for ordinary farmers loans are not part of the repertoire of services they either expect or desire. This is in great contrast to local elite farmers (not included in this study) who have access to other resources that make the risks of borrowing less onerous. Nevertheless, the contrast in access to loans between men and women is quite striking, and these figures represent a sample of farmers that had had access to AFC loans for three years. Such grave disparities in the initial stages of dispensing loans may grow wider, and, as such, the long-term consequences for women not gaining access to this highly valued resource are significant.

#### ECONOMIC FACTORS AND WILLINGNESS TO INNOVATE

All farmers are entitled to extension services, and ideally sex should have no impact on who gets what services. In reality, however, sex appears to have a substantial impact on obtaining services, as has been demonstrated. Perhaps extension personnel perceive women as unwilling or unable to adopt

innovations and thus avoid visiting female managers. The data collected make it possible to test whether or not such an assumption has any base in reality. In this section, I will examine the effect of economic standing, size of farm, and the early adoption of innovations on patterns of service delivery.

Access to cash is essential if many new innovations are to be adopted. For instance, it requires money to purchase new brands of seed and chemical fertilizers or to hire laborers. Women acquire money from a number of sources such as the sale of produce, the brewing of beer, and from husbands working for wages who send money home. I developed a five-point scale to measure access to cash.<sup>9</sup> The mean score was identical for both female and jointly managed farms. For purposes of simplicity, the income scale was dichotomized into low and high, with low representing a near-subsistence living style with little access to cash. Only slightly more female-managed farms were in the low category (53 percent) than were jointly managed farms (54 percent).

Table 4 examines how economic standing and type of farm management affects visits by agricultural instructors. The data support other studies which show a tendency for access to services to increase with wealth. What is striking about the table, however, is not so much that poor women receive the fewest visits, which is fairly predictable, but that this bias is maintained even at higher economic levels. In fact, the proportion of women farm managers receiving services at higher economic levels is exactly the same as that of jointly managed farms in the lower economic category. Thus, the argument that women are justifiably ignored because they lack cash and hence the means by which to experiment with new crops does not hold.

Table 4--AGRICULTURAL-INSTRUCTOR VISITS BY FARM-MANAGEMENT TYPE, CONTROLLED FOR ECONOMIC STANDING

	Low		High	
	Female	Joint	Female	Joint
No Visit	57%/28	39%/27	39%/14	16%/9
Visited 1 <sup>+</sup> Times	43%/21	61%/42	61%/22	84%/49
	N = 118		N = 94	

Similar reasoning on the part of extension officers might occur with respect to land. They might perceive women as holding such small parcels of land that they had no land on which to experiment with new crops. The minimal size considered an "economic" holding by the divisional land board is four acres, though in practice the mean and median measure of farms are well below that minimum. There is a slight tendency for women managers to inflate

low acreage categories because approximately a quarter of them are widows whose sons and daughters-in-law utilize the major portion of her husband's land. Widows are, in fact, somewhat more likely to receive services because of their age and long residence in the community.

Table 5 presents only those farms which are over five acres. Women, as 40 percent of the entire sample, are only slightly underrepresented in the large-farm category. Though the numerical size of this group demands cautious interpretation, it is evident that even women managers with extensive acreage are discriminated against in access to services. Farmers with large acreages tend also to have higher economic status, and thus both the required money and needed land on which to try new crop and husbandry practices. Explaining away the disparity in visits on the basis of lack of land simply cannot be done.

Table 5--AGRICULTURAL-INSTRUCTOR VISITS BY FARM-MANAGEMENT TYPE (FARM OVER 5 ACRES)

	<u>Female Managed</u>	<u>Jointly Managed</u>
No Visit	38%/3	7%/1
Visited 1 <sup>+</sup> Times	62%/5	93%/14
	(Yules Q: .79)	N = 23

Another assumption that might lead agricultural instructors to neglect certain categories of their clientele might be a perception that women managers are unwilling to try new ideas. An examination of the mean numbers of cash or food crops adopted by farm-management type reveals only very slight differences,<sup>10</sup> despite the additional labor available to jointly managed farms because of the presence of two or more adults.

Another way to examine responsiveness is to compare the earliness with which farmers adopt new crops. The most significant innovation in that area in recent years is hybrid maize. Both female and joint farm managers averaged a three and one-half year period from the time they had begun using hybrid maize. In an examination of early adopters—that is, farmers who grew hybrid maize as early as five or more years ago—a significant proportion of the women managers have never been visited by extension officers. Table 6 illustrates this finding. Almost a third of the women who were early adopters had no administrative support or advice for such a move, while only 3 percent of farms with a man present were so neglected. This might suggest an even greater innovativeness on the part of female managers compared to jointly managed farms, since to make such a decision without expert advice probably required autonomy, self-reliance, and a willingness to take a risk, qualities fostered by these women's independent life style. Yet despite their responsiveness, innovative women farmers tend to be ignored relative to their male counterparts.

Table 6--AGRICULTURAL-INSTRUCTOR VISITS BY FARM-MANAGEMENT TYPE  
(EARLY ADOPTERS OF HYBRID MAIZE)

	<u>Female Managed</u>	<u>Jointly Managed</u>
No Visit	31%/5	3%/1
Visited 1 <sup>+</sup> Times	69%/11	97%/33

N = 50

### CONCLUSION

Women managers experience a persistent and pervasive bias in the delivery of agricultural services, services to which they are entitled. Indeed, the bias increases in intensity as the value of the service increases and it makes no difference whether the women have high economic status, large farms, or have shown a willingness to adopt agricultural innovations. Yet despite these inequities women managers appear to be as productive and as adoptive as male farmers.

This discrimination appears to be the result of prejudice against women. As previously discussed, early policy pronouncements were directed primarily to men, and the agricultural extension service is largely composed of men. Present communication patterns, at least in rural Kenya, tend to occur among members of one sex, rather than between the sexes. Although administrative attitudes were not a prime focus of my research, I spoke with a number of agricultural instructors and found that a third expressed somewhat prejudicial attitudes towards women.<sup>11</sup> Thus, the majority did not express overtly prejudicial attitudes. Women were apparently avoided because of customary patterns whereby men spoke to men and women to women. This practice is evident from the following quotations from agricultural personnel:<sup>12</sup> "In the African way, we speak to the man who is the head of the house and assume he will pass on the information to other household members"; "Being men, of course it is easier for us to persuade men."

In farms where there is a man present, women farmers may benefit from agricultural services because the presence of a man places the farm within the communication network of the extension service. But farms managed by women, and those represent a sizeable portion of farm households, are not in those networks and are thus ignored.

Women have managed to maintain farm productivity largely without the aid or encouragement of the agricultural service. Though not discussed in this paper, the diffusion of agricultural information was found to occur among women's networks, particularly among the numerous women's communal agricultural and mutual-aid associations. In the short run this strategy is effective, but in the long run, women's associational activity may not be able to compensate for the increasingly valuable services being provided to farmers. Unless this discrimination is eradicated, the future appears grim both for women's productivity and the economy as a whole.

## NOTES

<sup>1</sup> A geographically purposive sample of 212 farm households was obtained in the Idakho location research site between December 1974 and June 1975. It represents 10 percent of the total number of households in the geographic areas targeted. My initial concern was to assure that varying distances from the road and main paths, and thus from agricultural instructors and services, would be covered. These geographic areas coincide with clan and subclan identities. Once spatial areas were designated in order to obtain geographic and clan representativeness, I attempted to select farms that would be representative of varying economic standings and age groupings. Numbers were based on my approximations of their proportion of the population. I did not know in advance, however, about who managed the farm until the interview had begun. The close correspondence of women managers to the proportion of female heads in Kakamega reported in the 1969 Census supports the notion that my choice of farmers was "chancelike" in method. The sample is not, however, a random one, and the universe of this sample is restricted to one location. The sample does not purport to generalize to all of Kenya or Africa, but rather to illustrate sex differences within a sample which may be suggestive for other parts of Kenya or Africa with agriculturally based economies in areas of high population density and rates of male out-migration. Though scientific sampling techniques were not utilized, I am confident that the sample judiciously represents a reasonable cross-section of farmers in western Kenya. The basis of this confidence is my six-month residence in one of the sublocations studied with a family who graciously welcomed me as an additional member. Through my residence there and my participation in community life, I gained in-depth knowledge of that subclan and that geographic area. A female research assistant from the area and I conducted the interviews, and she translated questions and responses from Luhya to English. We asked a systematic set of questions from each farmer about crops, husbandry practices, sources of information about farm practices, agricultural services, and demographic information. A typical interview took forty minutes.

<sup>2</sup> I attended a number of barazas and never were there more than 10 percent women in attendance.

<sup>3</sup> The national figures of one-third women remain relatively constant from the late colonial era until the late 1960s and are reported in the Ministry of Agriculture Annual Reports. Figures about the portion of classes devoted to vegetable gardening and the restriction of courses to the wives of administrative personnel were found in Kakamega District Annual Reports in agriculture, 1970-1973.

<sup>4</sup> One bag is 200 pounds, or 90 kilos.

<sup>5</sup> See the sample technique utilized, note 1. Because this is not a random sample, and thus does not purport a normal distribution, the Chi-Square Tests of Significance are technically not appropriate. The size of the sample may mean it approximates a normal distribution, and thus tests of significance have been included for exploratory purposes. Table sizes of less than 212 indicate missing data or are subsamples, as specified in the table title. Numbers have been rounded off to the nearest percentage.

<sup>6</sup> See note 2 on women's baraza attendance. While some women do drink, it is frowned upon for the majority of ordinary women and prohibited by the Protestant and African Independent churches in the area, many devout members of whom are women.

<sup>7</sup> These sureties are for the most common type of loan in the area, from the Agricultural Finance Corporation (AFC), which has made loans available since 1971 when the sublocations studied had completed the land-reform process and were declared adjudicated areas.

<sup>8</sup> Given the short time period (three years) in which AFC loans have been available, farmers who may have their loan application denied have not been formally notified but merely experience delay in response to their loan request. Therefore, that category of farmers who knew about loan applications includes both those who knew the procedure and those who applied, regardless of whether it has been informally denied by the delay, or may be formally denied in the distant future.

<sup>9</sup> The income scale was based on the value of the house and included such characteristics as the type of roof and the construction of the floor and walls and the possession of material goods such as the type and quantity of furniture.

<sup>10</sup> For analytic purposes, these are divided into food and cash crops, though hybrid maize is included in both categories. The cash crops include the hybrid maize-beans combination, coffee, European vegetables, passion fruit, and sugar cane. The food crops include the hybrid maize-beans combination, European vegetables, root crops (sweet potato or cassava), millet crops (finger millet or sorghum), and nut crops (groundnuts or monkey nuts). Mean adoption rates are as follows:

	<u>Female Managed</u>	<u>Jointly Managed</u>
Cash Crops	1.5	1.5
Food Crops	1.9	2.0

<sup>11</sup> I interviewed a dozen male agricultural instructors, several of whom were interviewed a number of times, at various levels in the administrative hierarchy in Kakamega.

<sup>12</sup> First interview at Bukura, December 1974; second, in Idakho, February 1975.

#### REFERENCES CITED

- Ascroft, Joseph, Fred Chege, Joseph Kariuki, Niels Roling, and George Ruigu. "Does Extension Create Poverty in Kenya?" *East African Journal* (March 1972).
- Boserup, Ester. *Woman's Role in Economic Development*. London: Allen and Unwin, 1970.
- Kenya Colony and Protectorate. *Annual Report*. London: HMSO, 1929.

Leonard, David K. "Organizational Structures for Productivity in Agricultural Extension." In *Rural Administration in Kenya*, edited by David K. Leonard. Nairobi: East African Literature Bureau, 1973a.

"~~Why Do~~ Kenya's Agricultural Extension Services Favor the Rich Farmer?" Paper presented to the 16th Annual Meeting of the African Studies Association, Syracuse, New York, October-November 1973b.

Mbilinyi, Marjorie. "The 'New Woman' and Traditional Norms in Tanzania." *Journal of Modern African Studies* 10 (1972): 57-72.

Sangree, Walter. *Age, Prayer, and Politics in Tiriki, Kenya*. London: Oxford University Press, 1966.

UN/ECA. "The Changing and Contemporary Role of Women in African Development." 1974.

Wagner, Gunter. *The Bantu of North Kavirondo*, vol. 1. London: Oxford University Press, 1949.