

FEMINIZATION OF AGRICULTURE WITHOUT LOSS OF PRODUCTIVITY AND INCOME. A CASE STUDY OF NYERI DISTRICT - KENYA

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Abstract

Farming is the most important economic activity for developing countries. It has been regarded as a male dominated activity which is bound to suffer in terms of total production and productivity if left in the hands of women. This stems from the notion that women are not capable of successfully carrying out the 'heavy' agricultural tasks which are performed by men leave alone being good farm managers. The aim and purpose of this paper was to try and establish if there was any significant difference in agricultural production between men managed farms and female managed farms. The research results have shown that women are not only capable of successfully carrying out the bulk of the heavy agricultural tasks but also are better farm managers than men. This has greatly contributed not only to increased total agricultural production but also productivity in areas where women are actively involved in agriculture as decision makers as evidenced in Mbogoini Village of Nyeri District and Hamisi Division A of Kakamega District.

Introduction

The usual assumption is that agriculture is a male domain and that when men abandon it, agricultural production suffers in terms of decreased yields or the abandonment of cash cropping (Kerven, 1984). The explicit reason given is labour constraints due to male absence. The implicit reason, however, is the lingering stereotypic belief that women are unable to manage the agricultural enterprise and to carry out many of the "heavy" agricultural tasks, such as ploughing. The image of women as "helpers" of the male farmer is quite powerful and it still influences the nature of labour force and agricultural statistics collected in many countries (Safilios-Rothschild, 1985). Consequently, there is usually considerable resistance to accepting women's transition from helper to farm manager, even when reality clearly demonstrates it.

A most striking example is provided by Lesotho, a country with a very high degree of semi-permanent male rural outmigration (50-60% of the active labour force) to South Africa in search of paid employment in mining and industries. As a result of this massive out migration, 30 - 35 percent of the rural households are *de facto* female-headed households in which women usually make the important agricultural decisions (Characteristics of Farm Households, 1976; Colson, 1981) and carry out all agricultural tasks, including traditionally male tasks such as ploughing and planting or hiring labour for the latter (Safilios-Rothschild, 1985).

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Despite this reality, the widespread belief that influences agricultural policies and programmes in Lesotho is that male migrants manage their farms by returning home in time to make the important agricultural decisions and to perform their traditional agricultural tasks. Research evidence, however, showed that when men returned home, they were very tired or sick and spent most of their time relaxing or on livestock-related tasks but not on agriculture (Wykstra, 1978). The observed lower yield per hectare in Lesotho cannot be attributed to male absence and the inability of women as farm managers but rather to the lack of reorientation of agricultural institutions in order to reach women farmers (Safilios-Rothschild, 1985).

In the last decade, in many developing countries male rural out migration (45 - 55% of the active labour force) has been creating an increasingly larger percent of *de facto* female-headed households and women-managed farms (Kerven, 1984). In Kenya, for example, farm surveys have been indicating that in many areas male rural out migration was responsible for a significant increase in women-managed farms. Thus, in Shitoli sub-location, Kakamega District in Western Province 55 percent of the surveyed farms were managed by women (Rukandema, 1980); in Mwila location, Machakos District, Eastern Province, 47 percent of the farms were managed by women (Rukandema, Mavua and Audi, 1981); and in Kawelu sub-location, 45 percent of the farms (Rukandema, Muhammed and Jeza, 1983). While these farm surveys do not provide detailed data about the operations and productivity of women versus men-managed farms, one study found that women-managed farms had higher crop yields than men managed farms most probably because women are, more often than men, full-time farmers (Rukandema, 1980).

In some areas, smallholder agriculture becomes almost entirely "feminized" because not only male out migration is very high but also because even when men do not migrate, they become more or less disengaged from farming. This tends to occur primarily in areas where landholdings have become small and in which there are a number of profitable non-farm occupational opportunities open to men. One such area is the Central Province in Kenya, and particularly Nyeri District (Figure 1).

The paper will present data collected in an in-depth study in Mbogoini, a village in Nyeri District.

Methodology

The data were collected during the months of March to July 1990 through 3-hour long interviews with husbands and wives (interviewed separately) on the basis of interview schedules. A random sample of 59 households out of a total of 170 households were interviewed in Mbogoini. However it was not possible to interview the migrant husbands in nine households because they were absent from their homes

and could not be contacted at their places of work since they were not stationed at one point. Mbogoini is in Konyu location of Mathira division, Nyeri District (Fig.1). It is a Kikuyu village quite typical of villages in Nyeri District with a high level of literacy for both men and women, low infant mortality, good access to schools and hospitals as well as good roads and transportation despite the high relief (Fig.1).

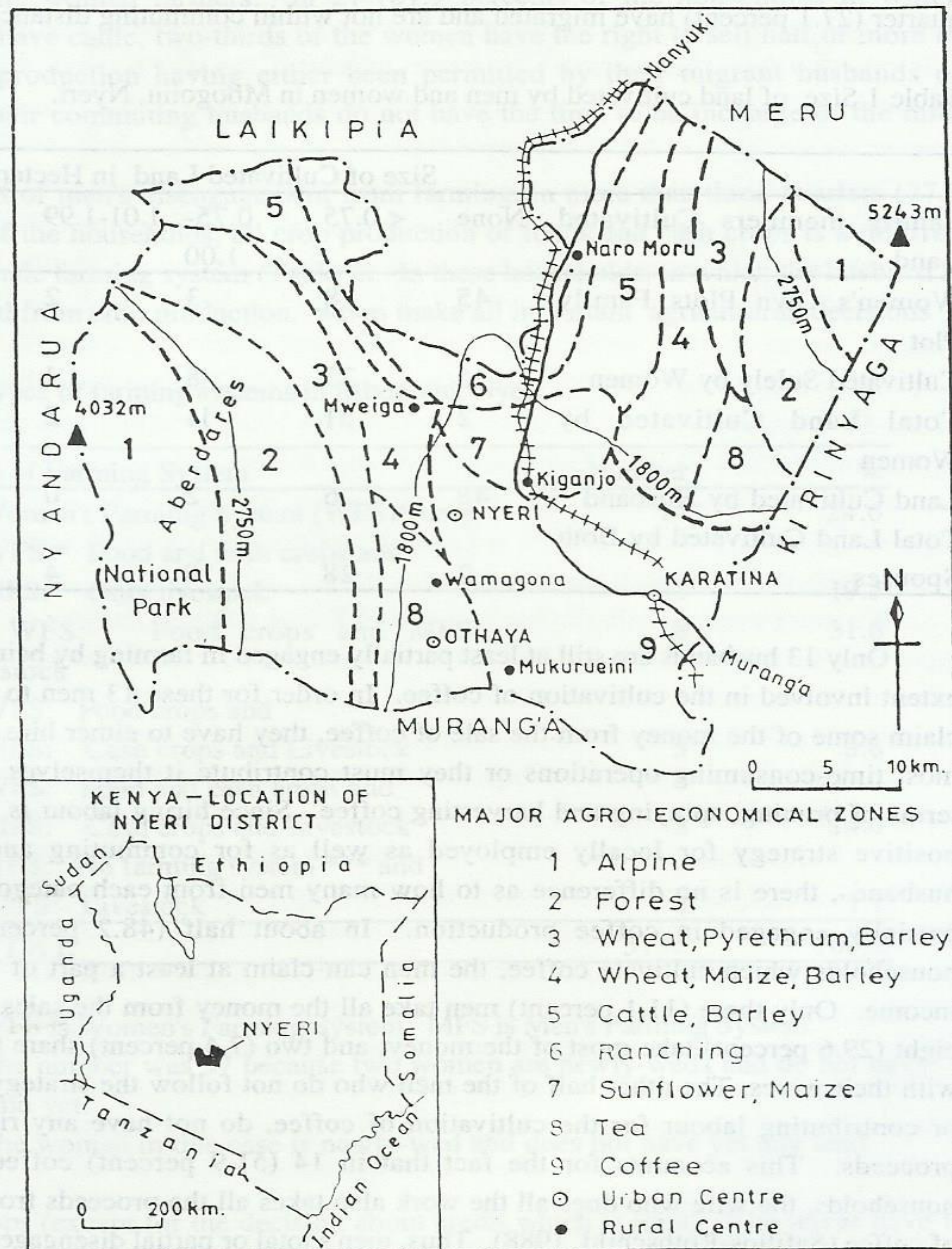


Figure 1 Location of Nyeri District and the major agro - economical zones.

The Farming System in Mbogoini

In Mbogoini, few husbands are actively involved in farming. This is due to the fact that landholdings are small (average size: 1.04 hectares, Table 1) and there are profitable non-farm employment opportunities for men in near-by towns or in Nairobi. About two-fifth (39 percent) of the men work away from Mbogoini but within commuting distance; one-third (32.2 percent) work locally; and about one-quarter (27.1 percent) have migrated and are not within commuting distance.

Table 1 Size of land cultivated by men and women in Mbogoini, Nyeri.

Family members Cultivated Land	Size of Cultivated Land in Hectares					
	None	< 0.75	0.75-1.00	1.01-1.99	2.00+	
Women's Own Plots	45	8	3	2	1	
Cultivated Solely by Women	15	23	8	1	12	
Total Land Cultivated by Women	2	31	11	2	13	
Land Cultivated by Husband	48	6	2	0	3	
Total Land Cultivated by Both Spouses	2	28	10	4	15	

Only 13 husbands are still at least partially engaged in farming by being to some extent involved in the cultivation of coffee. In order for these 13 men to be able to claim some of the money from the sale of coffee, they have to either hire labour for most time-consuming operations or they must contribute it themselves mainly in terms of pruning, spraying and harvesting coffee. Since hiring labour is a possible positive strategy for locally employed as well as for commuting and migrant husbands, there is no difference as to how many men from each category remain partially engaged in coffee production. In about half (48.2 percent) of the households which cultivate coffee, the men can claim at least a part of the coffee income. Only three (11.1 percent) men take all the money from the sales of coffee; eight (29.6 percent) take most of the money; and two (7.4 percent) share the money with their wives. The other half of the men who do not follow the strategy of hiring or contributing labour for the cultivation of coffee, do not have any right to the proceeds. This accounts for the fact that in 14 (51.9 percent) coffee growing households, the wife who does all the work also takes all the proceeds from the sale of coffee (Safilios-Rothschild, 1988). Thus, men's total or partial disengagement from

coffee production benefits the women who remain in charge of coffee production. It must be noted, however, that men's disengagement from crop production does not necessarily signify that they are disengaged from all farming activities. In fact, all men who are disengaged from crop production own some livestock, primarily cattle. Whether the men are commuting or are migrants, their ownership of livestock benefits the women farmers. In 27 (61.9 percent) of the households in which husbands have cattle, two-thirds of the women have the right to sell half or more of the milk production having either been permitted by their migrant husbands or because their commuting husbands do not have the time to be in charge of the milk sales.

As a result of men's disengagement from farming, in more than three-quarters (77.8 percent) of the households, all crop production of foods and cash crops is referred to as a female farming system (Table 2). In these households, in which the husband is disengaged from crop production, wives make all important agricultural decisions

Table 2 Types of farming systems in Mbogoini, Nyeri.

Type of Farming System	Number	%
1. Women's Farming System (WFS)* only	14	24.6
2. WFS:* Food and cash crops and MFS: Only livestock	11	19.3
3. WFS: Food crops and MFS: Livestock	18	31.6
4. WFS: Food crops and MFS: Cash crops and Livestock	5	8.8
5. WFS: Food and cash crops and MFS: Cash crops and Livestock	8	14.0
6. WFS: No farming system *** and MFS: Livestock	1	1.7
TOTAL	57**	100.0

* WFS is Women's Farming System. MFS is Men's Farming System.

** The number was 57 because two women are newly-weds and do not have land yet.

*** The woman in this case is newly-wed and does not have yet any land.

about crops (except for the decision about credit which is joint). The wives have to make these decisions either because the husbands are migrants who by nature of

their employment cannot commute home in time to make such decisions or the husbands have delegated such responsibilities to their wives (Table 3).

In these households, women also practically perform all agricultural work with some occasional help from hired casual labour. However, the title of the land that the women cultivate remains in the hands of the husbands. Only two women have the title to the land because they bought it themselves and another two will inherit it from their parents. However, the size of the land is small, women have considerable incomes and some land is becoming available for sale in the area, women are saving in order to buy more land.

Thus, in addition to the two women who have already bought land, eight more contribute money to a co-operative that accumulates funds in order to buy land for its members. It is also noteworthy that one-third of the women are renting land.

In Mbogoini, only eight women (13.6 percent) do not have an agricultural income. Seven of these women are newly weds and either they have yet no land to cultivate or they are temporarily subsistence farmers. The average agricultural income of the 51 women with such an income is 6,109.85 Kenya shillings per year (or the equivalent of US \$ 381.9). The most important sources of their agricultural income are: the income from selling milk and from selling coffee and the women with the highest agricultural income have a farming system that includes food crops and coffee while their husbands (or jointly) own cattle.

Women's average milk income is 3,463.26 Kenya shillings per year (\$ 216.5). In more than two-thirds (70.4 percent) of these cases, milk income constitutes half or more of the women's agricultural income and in more than one-third (37.0 percent) of the cases, it constitutes from one-third to one-half of their agricultural income.

On the other hand the average income from selling coffee, is 5,523.96 Kenya shillings per year (\$ 345.3). In almost half (45.8 percent) of these cases, the coffee income constitutes more than half of the women's agricultural income and another 29.2 percent of the cases, between one-third and one-half of the income. In Mbogoini, all women cultivate maize and beans; almost all of them cultivate vegetables (94.3 percent) and potatoes (92.5 percent); more than one-third (37.7 percent) cultivate coffee; and 28.3 percent cultivate bananas. Almost half (46.4 percent) of the women market a part of the production of bananas; about one-quarter market maize (26.4 percent), potatoes (22.5 percent) and vegetables (28.0 percent); and 17 percent market beans. In fact, bananas and vegetables are mainly cultivated as cash crops since in about three-quarters of the cases, half or more of the production is marketed (Table 4).

Table 3. Percent of Agricultural Decision Making Patterns for the Family Plot by Husband's Distance from Work In Mbogoini, Nyeri.

Husbands distance from work	Local < 1 km			Commuting 1 - 10 km			Non Commuting >10 km		
Decision made by:	H	W	B	H	W	B	H	W	B
What crops grow	6.3	81.3	12.5	-	71.4	8.6	-	93.3	6.7
How much to sell	-	78.6	21.3	15.4	69.2	15.4	12.5	62.5	25.0
Where and or how much to market production	-	81.8	18.2	20.0	50.0	30.0	-	100	
Agricultural credit	0.0	-	60.0	13.3	6.7	80.0	25.0	12.5	62.5
How credit should be used	5.0	-	75.0	-	7.7	92.3	-	25.0	75.0
Whether improved methods will be used	6.3	62.5	31.3	11.1	72.2	16.7	-	100	-
Whether new agricultural equipment will be bought	8.8	56.3	25.0	14.3	61.9	23.8	7.1	78.6	14.3
What type of seeds will be used	2.5	75.0	12.5	-	75.0	25.0	-	93.3	6.7
Whether fertiliser will be used	4.3	71.4	14.3	-	62.5	37.5	-	100	-

H - Husband

W - Wife

B - Both Husband and Wife.

Table 4. Percent of produce and livestock by-products marketed by women in Mbogoini.

Produce or By-product	Percentage of Production			Marketed	Total no. of women farmers
	< 50%	50%	51 - 88%	100%	
Maize	57.1	28.5	14.2	-	14
Beans	22.2	77.8	-	-	9
Vegetables	7.0	14.0	57.1	21.4	14
Fruits	15.4	7.7	30.8	46.2	13
Potatoes	54.6	36.4	9.1	-	11
Milk	33.3	48.1	18.5	-	27
Eggs	-	33.3	66.6	-	3

Institutional Mechanism Supporting Women's Agricultural Enterprise

Women in Mbogoini are able to effectively carry on their agricultural enterprise on their own because one of the important agricultural institutions has reoriented its services to them and because the women themselves have been able to organise in well managed women's groups. The important agricultural institution that has considerably reoriented its services and is reaching women farmers in the village and the entire Nyeri District and Central province is the agricultural extension service that has been active in the area as a Training and Visiting System for more than eight years. A national survey of the performance of agricultural extension in Kenya showed that when women are the full-time farmers, this fact tends to significantly affect and reorient the delivery of extension services. Thus, the survey shows that in Central Province, 39.1 percent of the extension workers (instead of the 21.9 national average) reported that women constituted 40 percent or more of their contact farmers that they visit regularly twice a month. In addition, 58.6 percent of the extension staff reported seeing the wives of the male contact farmers in half or more of their regular visits and the majority of them (80 percent) in most (70 percent or more) of the visits (The Performance of the National Extension Programme, 1986).

The above survey findings agree with the data collected in this study according to which, three-fourth of the women farmers in Mbogoini report being visited regularly by extension workers, attending agricultural meetings and demonstrations and having learned how to improve their agricultural practices. As a result of this regular access of women farmers to agricultural extension information, the majority of them report using improved seeds, fertilisers and pesticides. Thus, practically all

women (91.2 percent) use improved seeds, primarily for maize (in 87.7 percent of the cases); 70 percent use fertilisers, most often for maize (57.9 percent) and potatoes (40.4 percent) and less often for beans (35.1 percent) and vegetables (24.6 percent). More than three-quarters (80.7 percent) use pesticides mainly for potatoes (68.4 percent), and coffee (43.9 percent) and only one-third of them for tomatoes. Furthermore, while in two-fifth of the households women use improved seeds for crops which they consume, they tend to use more costly inputs, such as fertilisers and pesticides, on crops from which they earn an income. Thus, three-quarters of women who buy fertilisers and pesticides, use it on crops they market, such as potatoes, beans, and vegetables.

The importance of women's access to agricultural extension is reflected in their answers regarding their sources of information about inputs. More than four-fifth of all women who used improved seeds, fertilisers and pesticides report having learned the need to use these and what type of inputs to use from the agricultural extension agents.

However, credit policies and institutions, have not become reoriented on the basis of the agricultural reality in Central Province as well as in other provinces and districts in Kenya. The criterion for qualifying farmers for institutional agricultural credit remains the title of land ownership. It is reported, therefore, that in areas such as Central Province where men can meet the requirements for agricultural credit, most of them are not full-time farmers. The credit received is used by them for a variety of non-agricultural purposes and does not enhance agricultural production (Safilios-Rothschild, 1987). The women, on the other hand, who are full-time farmers do not have access to institutional agricultural credit unless they are members of agricultural co-operatives. Thus, in Mbogoini only eight women (14.0 percent) had received credit during the last five years through their co-operative membership.

Women's limited access to agricultural credit, however, does not in any way interfere with their ability to make agricultural investments. Women reinvest a part of their agricultural income in agriculture. The higher their agricultural income, the more they invest in terms of hiring agricultural labour as well as in terms of buying fertilisers. But also the higher is their total earned income (agricultural and nonfarm) the more they invest in agriculture (Table 5). We also find that women invest more in agriculture in terms of using inputs (improved seeds, fertilisers and pesticides) when they cultivate all the family landholdings and their farming system includes both food crops and coffee (while the husband has only livestock). It seems that when women cultivate the entire family landholdings, make all important decisions and control the proceeds from all crops, their motivation to invest in the land in order to increase agricultural productivity is greatly enhanced (Safilios-Rothschild, 1988).

Table 5. Percentage Sources and levels of women's income in Mbogoini, Nyeri (in Kenya Shillings).

Level of income	Agricultural income	Non-farm income	Total earned income	Earned from relatives	Grand Total*
None	18.6	17.0	5.1	-	-
< 1,999	20.3	44.1	13.6	13.6	-
2,00 - 3,999	18.6	13.6	16.9	20.3	8.5
4,000-5,999	18.6	6.8	16.9	13.6	15.2
6,000-9,999	10.2	8.5	15.2	22.0	23.7
10,000 +	13.6	10.2	32.2	30.5	52.5

* Grand Total income includes the total earned income, transfers from relatives and transfers from husbands.

In Mbogoini as well as in most districts of Central Province, women are organised in most often well managed women's groups and have become members of co-operatives. Thus, in Mbogoini more than two-third (69.5 percent) of women belong to a co-operative. The high degree of organisation helps increase women's visibility at village level and enhances the probability that they will have access to agricultural services and resources as a group.

The important role played by agricultural institutions and the extent of access to agricultural services and resources in enabling men and women farmers to maintain a high level of agricultural productivity and income is well illustrated by the state of agricultural production in Hamisi "A". Hamisi "A" is a village in Kakamega District, Western Province that was also studied in depth within the context of the same study (Tables 6-10). It ranks low in terms of the number of indicators of socio-economic development, such as literacy level (especially for women), infant mortality, access to schools and hospitals as well as to markets, road and transportation.

Furthermore, the Training and Visiting agricultural extension system was not yet operative in the area and did not reach male or female smallholders and women's degree of organisation into groups was very low.

Table 6 Size of land cultivated by men and women in Hamisi 'A'.

Family members Cultivating land	Size of Cultivated Land in Hectares				
	None	< 0.75	0.75-1.00	1.01-1.99	2.00 +
Women's Own Plots	3	32	8	9	1
Family Plot Cultivated Solely by Women	50	3	0	0	0
Total Land Cultivated by Women	2	31	10	9	1
Land Cultivated by Husband	25*	7	2	3	3
Total Land Cultivated by both Spouses	1	20	14	7	11

* In the case of the 13 absent husbands, the information is not complete as to whether or not they cultivate land.

Table 7. Types of Farming Systems in Hamisi 'A'.

Type of Farming System	Number	Percent
Women's Farming System only	7	18.0
WFS: Food and cash crops,		
MFS: Livestock	3	7.7
WFS: Food crops, MFS: Livestock	3	7.7
WFS: Food crops, MFS: Cash crops & livestock	2	5.1
WFS: Food and cash crops and		
MFS: Cash crops and livestock	2	5.1
WFS: Food crops, MFS: Cash crops	7	18.0
WFS: Food cash crops and		
livestock	1	2.6
WFS: Food and cash crops		
MFS: Food crops and livestock	1	2.6
WFS: Food crops, MFS: Food crops and livestock	6	15.4
WFS: Food and MFS: Food crops	3	7.7
MFS: Food and cash crops	4	10.3
TOTAL	39	100.0

It should be noted in table 7 that the number of respondents is 39 and not 53 because in 13 cases in which men were not interviewed, there is no information as to whether or not they cultivate food crops. However, there is information that 7 of these 13 men own livestock. Also, in one case, the newly-wed woman does not have yet any land to cultivate and the husband has no livestock.

Despite the fact that more than one-third (38.5 percent) of women farmers receive a part of the proceeds from the sale of coffee and tea, their share is very small since the average income from both cash crops is only 670.8 Kenya shillings per year (\$ 25.8) Table 7. Furthermore, although only three women are subsistence farmers and the marketing behaviour of women farmers in Hamisi "A" is quite similar to the marketing behaviour of women farmers in Mbogoini, their average agricultural income is quite low: 3,645.2 Kenya shillings per year (\$ 140.2). This is primarily due to the fact that the agricultural productivity of women in Hamisi "A" is low because they do not have access to agricultural extension information and cannot afford to buy inputs. Also in Hamisi "A", there are few marketing outlets and the prices of most marketed produce are two to three times lower than in Mbogoini.

It is also important to note that men's average agricultural income in Hamisi "A", where men's dominant farming system includes food and/or cash crops, is only 5,551.0 Kenya shillings per year (\$ 231.5), that is about half the average income of women farmers in Mbogoini (Table 10). Men in Hamisi "A" who grow the same combinations of crops as the women in Mbogoini but suffer from the same institutional inadequacies in terms of extension and marketing facilities as the women in the area, are not able to have a high agricultural productivity and income.

Table 8. Percentage agricultural decision-making pattern for women's individual plot by husband's work location in Hamisi 'A'. (Husbands' Answers).

Husband's Work Location	Works locally			Work away from home		
	H	W	Both	H	W	Both
Agricultural Decisions:						
What crops to grow	9.7	90.3	-	-	100	-
How much to sell	12.5	66.7	20.0	-	100	-
Where and how much to market production	-	90.0	10.0	-	100	-
Agricultural credit*	10.0	20.0	70.0	-	-	100
How credit should be used	-	100	-	-	-	-
Whether improved methods will be used	-	95.4	4.0	-	100	-
Whether new agricultural equipment will be bought	73.6	20.6	5.0	100	-	-
What types of seeds will be used	16.1	83.9	-	-	100	-
Whether fertiliser will be used	6.5	93.6	-	-	100	-

* Few women make credit decisions due to limited access.

Table 9. Percent of produce and livestock by-products marketed by women in Hamisi 'A'.

Produce or By-produce	Percent of production marketed				Total number of women who market
	50%	50%	51-88%	89-100%	
Maize	69.2	19.2	11.5	-	26
Beans	46.1	38.4	11.5	3.8	26
Vegetables	40.6	28.1	28.1	3.1	32
Tomatoes	14.2	42.8	28.5	14.2	7
Bananas	14.2	38.0	33.3	14.2	21
Potatoes	11.1	66.7	11.1	11.1	9
Milk	-	25.0	75.0	-	4
Eggs	41.6	33.3	20.8	4.1	24

Table 10 Percentage sources and levels of women's income in Hamisi 'A', Kakamega (in Kenya shillings) (N=53).

Level of income	Sources of Income				
	Agricultural	Non-farm	Total Income	Earned Income & from relatives	Grand Total*
None	5.7%	52.8%	5.7%	3.8%	-
< 1,999	58.4%	30.1%	43.4%	43.4%	16.9%
2,000-3,999	22.6%	9.5%	26.4%	24.5%	26.4%
4,000-5,999	3.8%	1.9%	9.5%	9.4%	18.8%
6,000-9,999	7.6%	1.9%	11.3%	13.2%	16.9%
10,000 +	1.9%	1.9%	3.8%	5.7%	20.7%

*Grand Total includes the total earned income, transfers from relatives and transfers from husband.

By way of conclusion, it may be stated that the comparison of women farmers on their own in Mbogoini with women farmers on their own in Hamisi "A" as well as with full-time men farmers in Hamisi "A" illustrates that men's and women's agricultural productivity and income depend more on the institutional conditions prevailing in the area than upon the gender of the farmer.

References

- Characteristics of Farm Households 1976 Thaba Bosiu Rural Development Project, Evaluation Study No. 9, Maseru Lesotho, mimeo.
- Gordon, E., 1981. An Analysis of the Impact of Labour Migration on the Lives of Women in Lesotho, *The Journal of Development Studies*, 17(3): 59-76.
- Kerven, C., 1984. The Family Farm and Outmigration: Some Issues for Farming Systems Research in Africa, paper presented at the Rural Sociology Workshop on the Role of Rural Sociology in Farming Systems Research and Technology Generation, Lusaka, Zambia.
- Rukandema, M., 1980. Determinants of Crop Yields on Smallholder Farms in Kenya, *Eastern Africa Journal of Rural Development*, 13 (1-2): 49-62.
- Rukandema, M., Mavua, J., and Audi, P.O., 1981. The Farming System of Lowland Machakos District. UNDP/FAO/GK Dryland Farming Research and Development Project, Report on Farm Survey Results from Mwala Location, Technical Report No. 1, Nairobi.
- Rukandema, M., Muhammed, L., and Jezza, A., 1993. The Farming Systems of Semi-Arid Southern Kitui, Eastern Province, Kenya mimeo.
- Safilios-Rothschild, C., 1983. The State of Statistics on Women in Agriculture, Statistical Division of the United Nations, Expert Group on Improving Statistics and Indicators on the Situation of Women: New York (ESA/STAT/AC/17/7).
- _____. 1985. The Persistence of Women's Invisibility in Agriculture: Theoretical and Policy Lessons from Lesotho and Sierra Leone, *Economic Development and Cultural Change*. 33(2): 299-317.
- _____. 1987 Proceedings of the Seminar on Agricultural Development, Population and the Status of Women" sponsored by CIDA: Nairobi, Kenya.
- _____. 1988. A Typology of Farming System of Men and Women in Kenya. Ministry of Agriculture and Fisheries: The Hague, the Netherlands.
- Wykstra, R. 1978. Farm Labour in Lesotho: Scarcity or Surplus? Ministry of Agriculture and Department of Economics, Colorado State University, LASA Division Paper Series No. 5, Kingdom of Lesotho.