Men's Crops? Women's Crops? The gender patterns of cropping in Ghana.

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In Ghana, as in much of Africa, researchers and policymakers are increasingly aware of the need to incorporate gender issues into their analyses and programs. Gender often enters discussions within agricultural development programs either through distinctions between male and female headed households or through distinctions between men's and women's crops. Men are often viewed as being responsible for producing cash crops, while women are responsible for producing subsistence crops for home consumption. One frequent critique of agricultural development programs has been that they have focused on men's cash crops rather than women's subsistence crops.

If crops could be categorized as men's and women's crops, this would simplify many things for both policy makers and development economists. We could then distinguish the effects of agricultural policies on men and women, simply by examining the effects of policy on different crops. Thus, it would be easier to determine how women would be affected by price changes or weather or pest shocks. It would also allow for policies to target either men or women, simply by targeting their crops. It would also simplify data collection needs if it could be assumed that women kept the money from some crops and men kept the money from other crops. [1]

However, little documentation exists as to whether distinctions between men's and omen's crops can be identified. This paper seeks to remedy this lack of information by examining the gender patterns of cropping in Ghana. Ownership and control over crops may be very complex. Individual household members may have claim to crops for

[1] For example, Hoddinott and Haddad (1995) used anthropological definitions of men's and women's crops in Cote d'Ivoire to assign agricultural income to men and women to analyze how men's and women's incomes differently affect household expenditure patterns.

different uses, such as grain stalks for animal feed and the grain for household consumption. Anthropological studies are often useful in detailing these complex relationships and economic studies often refer back to anthropological studies to provide context. However, the cultural definitions of men's and women's crops may not always match actual practices. While in Techiman, Ghana, I spoke with a woman who emphatically explained that yams were a man's crop. She then invited me to see her yam farm. Thus, it is useful to examine whether any of the commonly discussed patterns are visible in large-scale household survey data. For this analysis, data from the 1991-92 round of the Ghana Living Standards Survey (GLSS3), a large-scale nationally representative survey are used.[2]

In this paper, first, I discuss three different methods for assigning crops by gender. Thus, it provides a way to move beyond simply classifying farming households based on the gender of the household head. Second, for specific crops, I examine the share of the crop grown by men and women to see if there are distinct patterns of men's and women's crops. Third, I examine whether men or women are more likely to grow a particular crop, by examining the proportion of men or women who grow it. Fourth, the gender patterns of specific crops are discussed. I conclude with the broader policy implications.

The data allow us to draw three conclusions. First, in Ghana, most crops cannot be classified as either men's crops or women's crops. Only are few crops are only grown by men and no crops are only grown by women. Most crops are grown by both men and women, regardless of the method of assigning crops to individuals. Nonetheless, there are still patterns of cropping by gender. Some crops have a greater proportion of women

[2] 4,552 households were interviewed, of which 3027 reported harvesting crops in the previous year.

growing them and some are more likely to be grown by women than by men. Finally, the method of assigning individuals to crops does matter. Different results are obtained depending on whether we compare crops grown by male- and female-headed households, crops grown on land held by men and women, or crops grown on land where men and women keep the revenue. Thus, there are policy implications of the gender patterns of cropping, but the patterns are more complex than simply that specific crops are grown by either men or women.

Identifying Men's and Women's Crops

Three definitions of gender patterns of cropping can be analyzed using the GLSS data. Crops may be assigned the gender of the household head, the gender of the person who held the land on which it was grown, or the gender of the person who kept the revenue from the plot on which it was grown. Data on which household members worked on a particular plot is not available. In this paper, I do not examine the quantities grown by different individuals; instead I use just a dichotomous measure of whether or not they harvested any of the crop in the past twelve months.

Studies of gender issues in agricultural production often simply compare the behavior of households headed by men with those headed by women. Data on the sex of the household head is frequently one of the few demographic variables available in agricultural household surveys. It provides an easy way to make some generalizations about gender. There is evidence that male and female-headed households face different constraints and make different decisions. For example, in Ghana, after controlling for the access to resources, the adoption of improved maize technologies does not depend on the

gender of the farmer, but does depend on the gender of the household head (Doss and Morris, 2001).

The definition of female-headed household varies across surveys. In the GLSS3, the interviewers were asked to determine the head of the household. They were told "usually the head of the household is the person who provides most of the needs of the household and is familiar with all the activities and occupations of the household members. He will be the person named when you ask the question, 'Who is the head of the household'" (Republic of Ghana Statistical Service, 1990). This clearly leads interviewers to look for a male household head. The person named as the head of the household was included as a household member, regardless of the amount of time that he or she had spent away from the household in the previous year. This definition means that we would expect that only *de jure* female heads of households are included in the category of female heads of households in this survey. Households that are *de facto* headed by women may still be counted as male headed. A surprising number of women in the GLSS3 report being both married and the head of the household. Typically their husbands are not present. As Rogers (1995) notes in a study in the Dominican Republic, different definitions of female headed households may result in significantly different households falling into the category. In the GLSS3, approximately 26% of the farming households were headed by women. However, the patterns vary across the three ecological zones. In both the coastal and forest zones, 32% of households are female-headed while in the northern savannah zone, only 12% of households are female-headed.

Knowing the gender of the household head does not tell us many of the important things about household structure. In particular, it tells us nothing about crops grown by

women in male-headed households. Thus, as a second approach, crops are assigned on the basis of the gender of the person holding the land. Each person who held land was asked a number of questions regarding all of the crops that were harvested from their land in the previous year. Thus, we can identify which crops were grown on plots held by men and by women.

Finally, for each plot of land, the person holding the land was asked, "Who decides what crops to grow?" "Who decides what purchased inputs to use?" and "Who kept the revenue from the sale of the produce?" Although each of these questions is interesting, the answers are highly correlated. Thus I focus on the question regarding the gender of the individual who keeps the revenue from the plot on which the crop was grown. Ideally, it would be useful to have this information on each crop, but the data was collected by plot. Some farmers reported that no revenues were received from crops grown on particular plots.

In this paper, I will refer to women and men farmers as the general categories. Household head, holder of land, and keeper of revenue are thus three ways to define women and men farmers and to assign specific crops to them.

The percentage of women farmers varies across the three ecological zones in Ghana, regardless of the definition of women farmer. Thus, it is important to examine gender patterns of cropping by zone. Three distinct agro-ecological zones are present in Ghana. The coastal zone includes a narrow belt of savannah that runs along the Atlantic coast, widening toward the east of the country. The principle staples are maize and cassava, which are often intercropped. The forest zone is immediately inland from the coastal zone. Most of Ghana's forest is semi-deciduous, with a small area of high rain

forest remaining only in the southwestern part of the country. The staple crops of the forest region are maize intercropped with cassava, plantain, yam or cocoyam. In both the coastal and forest zones women head 32% of the households. Finally, the savannah zone occupies most of the northern part of the country. Sorghum and millet[3] are the dominant cereals in the drier areas, with cassava, maize and yams grown in areas with more rainfall. Only 12% of the farming households in this zone are female headed.

Men's Crops and Women's Crops

First, we ask whether any crops can be clearly identified as a man's crop or a woman's crop by looking at the proportion of those growing the crop that are women. Table 1 presents the percentage of crops grown by women, using each of the three methods of assigning crops by gender and disaggregating by agro-ecological zone. No crops are grown primarily by women, regardless of the method of assigning crops by gender. For Ghana as a whole, women are at most 37% of those growing any crops; the proportion increases to a maximum of 51% when the data is disaggregated by zone. A few crops may be considered men's crops, including rice, sorghum, tobacco and coffee. However, most of the crops cannot be distinguished as being grown either by men or by women.

Table 1 also provides information on whether the crop is disproportionately grown by men or women. I will refer to a crop as being disproportionately grown by women if the proportion of farmers growing the crop who are women is different from the proportion of farmers (growing any crops) who are women. A number of crops are

[3] Sorghum, millet, and guinea corn are treated as one crop in the GLSS3 data.

disproportionately grown by women or men. However, once we disaggregate by zone, for we cannot reject the null hypothesis that the proportion of the crops grown by women is equal to the proportion of women as farmers for the majority of crops. We can examine these numbers using each of the three methods of assigning crops to men and women.

Household heads

There are no crops that are grown mainly by female-headed households. At least 62% of all of the households growing any crop are male-headed. Several crops, many of them minor crops, are primarily grown in male-headed households. For example, only 26 households, all of them male-headed, grow tobacco.

However, a number of crops are disproportionately grown in either male-headed households or female-headed households.[4] Cocoyam, plantain, onions and eggplant are all disproportionately grown by female-headed households in Ghana. However, we would not want to call these "women's crops" since only 30-31% of the households growing them are female-headed. This proportion, however, is significantly higher than percentage of households headed by women overall, which is only 26%. The other staples, maize, yams, rice and sorghum are all disproportionately grown by male-headed households. The latter two might be considered "men's crops." Yams and maize are grown by a significant number of female-headed households.

When we consider cropping patterns by zone, there are fewer crops that are disproportionately grown by male- or female-headed households. Cassava and cocoyam are disproportionately grown by female-headed households in the savannah zone, but not

[4] Note that the numbers of farmers growing each of the crops are listed in tables 2-4.

in either of the other zones where it is more widely grown. When we look at the data by zone, plantain is not disproportionately grown by female-headed households. Maize is disproportionately grown by male-headed households only in the forest zone. Pepper is disproportionately grown in the savannah zone by male-headed households. Most cocoa is grown in the forest zone, where it is disproportionately grown in male-headed households.

Although several crops that are typically considered "men's crops," including yams and cocoa, are disproportionately grown by male-headed households, they are still grown by a substantial number of female-headed households.

Holder of Land

Only a few changes occur when we assign crops based on the gender of the person who holds the land. Among the staple crops, there are changes in the gender patterns of cropping maize and yams. Maize is grown disproportionately on land held by men in the savannah zone, and yams on land held by men in the forest zone.

More changes are noted for other crops, although again many of the differences disappear when we consider the patterns by zone. One notable exception is that tomatoes are disproportionately grown on plots held by men in the forest zone, although they are not disproportionately grown by male-headed households.

Keeper of Revenue

Finally, we assign gender of crops on the basis of the gender of the person who keeps the revenue from the plot on which the crop was grown. The most striking thing

about these results is that no crops are disproportionately grown on plots from which women keep the revenue. In addition, a number of crops move into the category of being disproportionately grown by men when this assignment method is used.

Cocoyam is disproportionately grown by female-headed households and on plots held by women; however, it is not disproportionately grown on plots for which women keep the revenue. Cassava is disproportionately grown on plots where men keep the revenue, both for Ghana as a whole and for the forest zone. This suggests that when these crops are grown as cash crops, they are grown by men.

Tomatoes, for both Ghana as a whole and for the forest zone, are disproportionately grown on plots where men keep the revenue. This is consistent with the story that I was told in the forest zone that tomatoes were traditionally considered a women's crop but are now increasingly being grown by men as a cash crop. Similarly, pepper is disproportionately grown on plots where men keep the revenue for Ghana as a whole and for the savannah zone, even though it is not grown disproportionately on men's plots in these areas.

Again, we can conclude that crops cannot be divided into men's and women's crops, but there are gender patterns in the crops that are grown.

Are Men or Women more Likely to Grow Specific Crops?

A second approach to examining the gender patterns of crops is to ask whether men or women are more likely to grow a particular crop. Thus, we look at all male farmers and ask how many of them grow this particular crop. We do the same for

women. Tables 2-4 present these results and indicate whether the proportions are statistically different for women and men.

Household heads

Table 2 presents the number of female household heads growing a particular crop as a proportion of all female household heads, the number of male household heads growing a particular crop as a proportion of all male household heads, and the significance level of the chi-squared test that the two are the same.

We find that looking at Ghana as a whole, we reject this null hypothesis for a large number of crops. Male-headed households are more likely to grow beans/peas, cocoa, coconut, leafy vegetables, maize, okra, oranges, other vegetables, peanuts, rice, sorghum, sugar cane, tobacco, and yams. Female-headed households are more likely to grow cassava, cocoyam, eggplant, onion, pawpaw, and plantains.[5]

However, some of the differences may be related to the fact that the number of women assigned crops is correlated with the agro-ecological zones. Thus, it is important to disaggregate the data by zone. In both the coastal zone and the forest zone, there are no crops that are more likely to be grown by female-headed households than by male-headed households. In the savannah zone, cocoyam and cassava are both more likely to be grown in female-headed households. By zone, we also find that fewer crops can be distinguished as being more likely to be grown in male-headed households.

[5] The differences are statistically significant at least at the .05 level.

Holder of Land

The second method of assigning crop gender is based on gender of the person holding the plot. Thus, we can test the null hypothesis that the number of women holding land and growing the crop as a proportion of all women holding land is equal to the number of men holding the land and growing the crop as a proportion of all men holding land. Table 3 presents these calculations.

For Ghana overall, more of the results are statistically significantly different when considering the gender of the farmer than when considering the gender of the household head. Men who hold land are more likely to grow bananas, beans/peas, cocoa, coconut, coffee, cotton, leafy vegetables, maize, oil palm, okra, oranges, other vegetables, peanuts, pineapple, rice, sorghum, sugar cane, tobacco and yams. Women who hold land are more likely to grow cassava, cocoyam, onion, pawpaw and plantains.

When it is broken down by zone, we again find that the only crops which women are more likely to grow on their plots than men are cassava and cocoyam in the savannah zone.

Gender of the Keeper of the Revenue

The final method of assigning crops by gender is to examine the gender of the person who keeps the revenue from the plots on which the crops are grown. Again, we test the null hypothesis that the number of individuals receiving revenue from plots on which this crop is grown as a proportion of all farmers is the same for men and women. Table 4 presents these calculations.

There are no crops that are more likely to be grown on plots where women keep the revenue than on plots where men keep the revenue. Several crops which had been more likely to be grown on plots held by women, including plantain and cocoyam are not more likely to be grown on plots where women keep the revenue. Cassava was more likely to be grown on plots held by women, but is more likely to be grown on plots where men keep the revenue. Other crops where the likelihood of them being grown on plots held by women and plots held by men, were equal, such as pepper and tomatoes, are more likely to be grown on plots where men keep the revenue.

Many of these results continue when we examine the data by zone. Cassava and cocoyam, which had been grown by female-headed households and on plots held by women are not more likely to be grown on plots where women keep the revenue in the savannah zone. Thus, once we look at crops that are grown for sale, there are none that are more likely to be grown by women.

We do observe differences in whether the crops are disproportionately grown by men and women depending on the manner in which we assign crops to individuals. The data suggests that women farmers are less likely to use their plots to grow crops for sale. However, it is important to remember that there is a big difference between claiming that only men grow cash crops and only women grow subsistence crops, to saying that although both men and women are involved in producing both cash and subsistence crops, men are more involved in the cash crop sector while women are more involved in producing for home consumption. The gender patterns are important, but factors other than the gender of the farmer enters into the decisions of which crops to grow.

Gender Patterns of Specific Crops

Some women are involved in growing almost all of the crops, including those disproportionately grown men. One interesting issue is whether the women who grow crops that are more frequently grown by men are systematically different from other women farmers. If they are systematically different, this provides ways to target specific groups of women.

Cocoa is disproportionately grown by male farmers, regardless of the method of assigning crops by gender. Eighty-eight percent of cocoa farmers are in the forest zone, where cocoa is more likely to be grown by men. In the forest zone most of the 462 farmers growing cocoa (329 men, 92 women) were both the head of the household and the holder of the land and they kept the revenue, if any, from the sales from the plot. In the coastal and savannah zones, this was true for all farmers growing cocoa. Six women grew cocoa on their farms in male-headed households and five men grew cocoa in female-headed households. However, even in the forest zone 22%-23% of those growing cocoa were women, depending on the method of assigning crops by gender. In the forest zone, 22% of female-headed households grew cocoa, and 18% of women who held land harvested cocoa from it. Thus, even though cocoa is a cash crop and a crop predominately grown by men, a number of women grow and sell it.

Table 5 indicates that the women who grow cocoa on the land that they hold are, on average, older and less educated than the average for all women who hold land. They are also more likely to be Christian and speak Akan. Of those 112 women who were both the head of the household and the holder of the land on which cocoa was grown, 36% reported themselves as married, 32% as divorced or separated, and 29% as widowed.

Yam is similarly a crop grown disproportionately by men, in several of the categories and zones. The women farmers growing yams on their plots are more educated than the average woman land holder. They also live in households with incomes higher than that of the households of the average woman who holds land. They are also more likely to be Christian and Akan speaking.

Maize is similarly a crop that, under several methods of assigning gender to crops, is more likely to be grown by men, especially for Ghana as a whole and the forest and savannah zones. The women growing maize on their land are more likely to be in female-headed households than women growing other crops on their land. However, there are not other distinguishing characteristics of women growing maize on their land other than that they are more likely to be Akan speaking and less likely to speak languages other than Akan, Ewe and Ga.

Cassava is the staple crop that shifts from being disproportionately grown by female-headed households in the savannah to disproportionately being grown on plots from which men keep the revenue in the forest zone and for Ghana as a whole. Women growing cassava on their plots are again more likely to be female heads of households and more likely to be Akan speaking than the average female who holds land.

Finally, cocoyam is the one staple that is never disproportionately grown by men. It is disproportionately grown by female-headed households and by women land holders. Women who grow cocoyam on their plots are better educated, and more likely to be Christian and Akan speaking than the average woman holding land.

Thus, the women growing staple crops on their land are all more likely to be female-headed households than the average women holding land. This suggests that

among households where there is a male head and a female who holds land, the woman may be more likely to concentrate on non-staple crops, especially vegetables, leaving the staple crop production to her husband. However, a substantial number of women are growing staple crops, and thus, any policies that affect staple crop production and prices will have an effect on women, as will cocoa, one of the main cash crops. It is not the case that women growing staple crops are poorer than the average women landholders, even though they are more likely to be in female-headed households.

Conclusion

The data presented in this paper suggests that we cannot divide crops into those grown by men and those grown by women. Thus, these distinctions should not be used to guide policy making or to make inferences about men's and women's agricultural production or incomes. Men are more heavily involved in cash crop production, but women are involved in the production and sales of all of the major crops.

However, the data also indicates that there are gender based cropping patterns in Ghana which means that agricultural policy cannot be gender neutral. Many crops are disproportionately grown by men or women, depending on the ecological zone and the method of assigning crops to individuals. Female-headed households are more likely to be directly affected by policies towards staple crops than are women farming their own land in male-headed households.

Unfortunately, the data available through the GLSS3 does not allow us to examine all of the nuances of gender patterns of cropping in Ghana. A number of women are involved in farming but are not counted among the women farmers in this survey, either

because they farm for household consumption on plots held by men or because individual plots may contain crops for which different individuals claim ownership rights.

The data also does not allow us to examine the dynamic processes involved in crops being grown by men and women. The data is consistent with the idea that as crops become more profitable, men tend to move into their production. However, we cannot explicitly test this hypothesis. We do see that for a number of crops, they are more likely to be grown on plots where men keep the revenue, even if they are not more likely to be grown on plots held by men generally. Many crops are grown both for home consumption and for market sale, and the data suggest that they are more likely to be grown by men when they are destined for the market. Further exploration of the issue of which women grow crops for the market would make it possible to target policies towards encouraging women to grow additional crops for market sales.

Table 1. Percentage of Crops Grown by Women, Assigning Crops by gender using three definitions, by zone, Ghana 1991-92.

	Female-Headed Households				Women hold the land				Women keep revenue from the plot			
	Ghana	Coast	Forest	Sav.	Ghana	Coast	Forest	Sav.	Ghana	Coast	Forest	Sav.
Avocado Pear	0.28	0.23	0.30	0.00	0.30	0.23 MM	0.31 M	..	0.29	0.22 MM	0.31 M	0.00
Bananas	0.25	0.26	0.27 M	0.12	0.27 MM	0.30	0.27 MM	0.15	0.26 MM	0.29	0.26 MM	0.13
Beans/Peas	0.13 MM	0.35	0.21 M	0.08 MM	0.16 MM	0.40	0.28 M	0.10 MM	0.14 MM	0.36	0.26 M	0.08 MM
Cassava	0.35	0.32	0.32	0.16 FF	0.33	0.38	0.36	0.21 F	0.23 MM	0.42	0.32 MM	0.18
Cocoyam	0.30 FF	0.28	0.32	0.18 F	0.35 FF	0.35	0.37	0.24 F	0.33	0.34	0.35	0.22
Cocoa	0.22 M	0.25	0.22 MM	0.20	0.23 MM	0.25 MM	0.23 MM	0.33	0.23 MM	0.26 M	0.22 MM	0.40
Coconut	0.17 MM	0.19 MM	0.14 MM	..	0.18 MM	0.22 MM	0.12 MM	0.25	0.18 MM	0.20 MM	0.17 MM	..
Coffee	0.10	..	0.11 M	..	0.10 MM	..	0.11 M	..	0.12 M	..	0.13 M	..
Cola Nut	0.14	..	0.12 M	..	0.17 MM	..	0.16 M	..	0.14 M	..	0.13 MM	..
Cotton	0.06 M	..	..	0.00	0.06 MM	..	..	0.00 M	0.17	..	..	0.00
Egg Plant	0.29 F	0.32	0.31	0.15	0.35	0.42	0.34	0.24	0.31	0.37	0.31 MM	0.20
Leafy Vegetables	0.16 MM	0.29	0.38	0.08 MM	0.20 MM	0.29	0.38	0.14 M	0.17 MM	0.29	0.37	0.07 MM
Maize	0.24 M	0.45	0.30 M	0.10	0.29 MM	0.37	0.34 M	0.14 MM	0.27 MM	0.34	0.32 MM	0.12 MM
Mango	0.29	0.30	0.32	0.07	0.30	0.31	0.33	0.10	0.28	0.27 M	0.31	0.07
Oil Palm	0.24	0.25 M	0.25 MM	0.08	0.26 MM	0.28 MM	0.27 MM	0.13	0.25 MM	0.25 MM	0.26 MM	0.11
Okra	0.22 MM	0.34	0.32	0.09 MM	0.28 MM	0.42	0.36	0.15 M	0.26 MM	0.39	0.34	0.12 MM
Onion	0.32 FF	0.37	0.36	0.13	0.37 F	0.39	0.41	0.25	0.34	0.39	0.36	0.22
Oranges	0.21 M	0.14 MM	0.23 MM	0.15	0.21 MM	0.16 MM	0.23 MM	0.15	0.21 MM	0.16 MM	0.22 MM	0.08
Other Vegetables	0.18 M	..	0.34	0.08	0.19 MM	..	0.32	0.10 MM	0.14 MM	..	0.26	0.06 MM
Pawpaw	0.31 FF	0.39	0.32	0.08	0.33	0.44	0.33	0.08 M	0.31	0.40	0.31 M	0.08
Peanut	0.15 MM	..	0.34	0.09 M	0.19 MM	0.51 F	0.37	0.14 MM	0.18 MM	..	0.35	0.13 MM
Pepper	0.25	0.30	0.32	0.07 MM	0.31	0.38	0.36	0.14 M	0.28 MM	0.39	0.34	0.11 MM
Pineapple	0.23	0.29	0.20 MM	0.11	0.25 MM	0.33	0.22 MM	0.11	0.23 MM	0.29	0.22 MM	0.11
Plantains	0.30 FF	0.30	0.32	0.14	0.34 F	0.34	0.36	0.21	0.32	0.32 M	0.33 M	0.17
Rice	0.06 MM	..	0.06 MM	0.05 MM	0.06 MM	.. F	0.08 MM	0.04 MM	0.04 MM	1.00	0.07 MM	0.03 MM
Sorghum/Millet	0.06 MM	..	..	0.06 MM	0.07 MM	..	..	0.07 MM	0.05 MM	..	..	0.05 MM
Sugar Cane	0.12 M	0.15 M	..	..	0.14 MM	0.15 MM	0.05 MM	..	0.13 MM	0.17 M	0.08 M	..
Sweet Potatoes	0.18	0.23	0.29	0.04	0.29	0.36	0.43	0.12	0.25	0.24	0.43	0.15
Tobacco	0.00 MM	..	..	0.00 M	0.04 MM	..	..	0.04 M	0.00 MM	..	..	0.00 M
Tomatoes	0.25	0.31	0.29	0.10	0.31	0.41	0.33 M	0.17	0.28 MM	0.36	0.30 MM	0.15
Yam	0.23 MM	0.29	0.31	0.08 MM	0.26 MM	0.33	0.34 M	0.10 MM	0.24 MM	0.30	0.31 MM	0.09 MM
% Female*	0.26	0.32	0.32	0.12	0.32	0.38	0.37	0.18	0.28	0.37	0.33	0.14

* Percentage of farmers in the category who are female. .. Indicates that five or fewer households/farmers grow the crop

FF proportion of women growing the crop is greater than the proportion of men in the population at the .01 level. F at the .05 level

MM proportion of men growing the crop is greater than the proportion of men in the population at the .01 level. M at the .05 level

Table 2. Gender Patterns of Cropping, by Gender of Household Head and Zone, Ghana 1991-92.

	Ghana			Coastal Zone			Forest Zone			Savannah Zone		
Crop Name	No. of HHs	% of MHHs	% of FHHs	No. of HHs	% of MHHs	% of FHHs	No. of HHs	% of MHHs	% of FHHs	No. of HHs	% of MHHs	% of FHHs
Avocado	383	0.12	0.14	40	0.07	0.04	334	0.24	0.21	9	0.01	0.00
Bananas	441	0.15	0.14	61	0.10	0.07	339	0.25	0.20 M	41	0.04	0.05
Beans/Peas	604	0.24	0.10 MM	68	0.10	0.11	80	0.06	0.04 M	456	0.52	0.33 MM
Cassava	2375	0.75	0.87 FF	585	0.88	0.87	1340	0.93	0.92	450	0.47	0.68 FF
Cocayam	1341	0.42	0.52 FF	198	0.31	0.26	1017	0.70	0.71	126	0.13	0.21 F
Cocoa	519	0.18	0.15 MM	52	0.09	0.06	462	0.37	0.22 MM	5	0.00	0.01
Coconut	136	0.01	0.03 MM	85	0.15	0.07 MM	49	0.04	0.02 MM	2	0.00	0.00
Coffee	20	0.01	0.00	1	0.00	0.00	18	0.02	0.00	1	0.00	0.00
Cola Nut	29	0.01	0.01	2	0.00	0.00	25	0.02	0.00	2	0.00	0.00
Cotton	16	0.01	0.00	1	0.00	0.00	0			15	0.02	0.00
Egg Plant	668	0.21	0.25 F	178	0.27	0.27	395	0.28	0.27	95	0.10	0.13
Leafy Veg	524	0.20	0.10 MM	17	0.03	0.02	125	0.08	0.10	382	0.43	0.29 MM
Maize	2384	0.80	0.74 MM	517	0.79	0.75	1181	0.84	0.76 MM	686	0.76	0.65 M
Mango	301	0.10	0.11	61	0.09	0.08	211	0.15	0.15	29	0.03	0.02
Oil Palm	817	0.28	0.25	201	0.33	0.23 MM	568	0.43	0.31 MM	48	0.05	0.04
Okra	1334	0.46	0.38 MM	177	0.26	0.28	594	0.41	0.41	563	0.64	0.45 MM
Onion	269	0.08	0.11 F	51	0.07	0.09	170	0.11	0.13	48	0.05	0.06
Oranges	310	0.11	0.08 M	58	0.11	0.04 MM	239	0.18	0.09 MM	13	0.01	0.02
Other Veg	154	0.06	0.04 M	1	0.00	0.00	62	0.04	0.05	91	0.10	0.07
Pawpaw	504	0.15	0.20 FF	96	0.13	0.17	368	0.25	0.26	40	0.05	0.03
Peanut	650	0.25	0.13 MM	53	0.06	0.11	70	0.05	0.05	527	0.59	0.46 MM
Pepper	1746	0.58	0.56	355	0.55	0.50 M	933	0.64	0.66	458	0.53	0.29 MM
Pineapple	300	0.10	0.09	95	0.15	0.13	186	0.15	0.08 MM	19	0.02	0.02
Plantains	1436	0.45	0.55 FF	263	0.41	0.36	1063	0.74	0.73	110	0.12	0.14
Rice	299	0.13	0.02 MM	2	0.00	0.01	71	0.07	0.01 MM	226	0.27	0.10 MM
Sorghum/Millet	528	0.22	0.04 MM	0	0.00	0.00	3	0.00	0.00	525	0.61	0.32 MM
Sugar Cane	49	0.02	0.01 M	26	0.05	0.02	19	0.02	0.00 MM	4	0.00	0.02
Sweet Potatoes	68	0.02	0.02	22	0.04	0.02	21	0.02	0.01	25	0.03	0.01
Tobacco	26	0.01	0.00	0	0.00	0.00	0			26	0.03	0.00
Tomatoes	1134	0.38	0.37	289	0.44	0.42	575	0.41	0.37	270	0.30	0.25
Yam	1242	0.43	0.37 MM	103	0.16	0.14	734	0.49	0.42 MM	405	0.46	0.31 MM
No.*	3027	2245	782	667	453	214	1446	985	461	914	807	107

* No. is the denominator in the fractions FF (MM) women (men) growing crop/all women (men) growers > men (women) growing crop/all men (women) growers significant at the .01 level F (M) at the .05 level (only reported if there are sufficient observations to calculate it.)

Table 3. Gender Patterns of Cropping by the Gender of the Person Holding the Plot of Land and Zone, Ghana 1991-92.

	Ghana			Coastal Zone			Forest Zone			Savannah Zone		
Holders Growing Crop	Total holders	% of M holders `	% of F holders	Total holders	% of M holders `	% of F holders	Total holders	% of M holders `	% of F holders	Total holders	% of M holders `	% of F holders
Avocado Pear	384	0.12	0.11	40	0.07	0.03 [M]	335	0.23	0.18 [M]	9	0.00	0.00
Bananas	441	0.14	0.11 [M]	61	0.10	0.07	339	0.25	0.16 [MM]	41	0.04	0.03
Beans/Peas	604	0.23	0.09 [MM]	68	0.09	0.10	80	0.06	0.04 [M]	456	0.51	0.25 [MM]
Cassava	2377	0.71	0.77 [FF]	585	0.84	0.82	1341	0.86	0.81 [MM]	451	0.44	0.53 [F]
Cocayam	1342	0.39	0.46 [FF]	198	0.30	0.25	1017	0.64	0.64	127	0.12	0.17 [F]
Cocoa	520	0.18	0.12 [MM]	52	0.09	0.05 [M]	462	0.35	0.18 [MM]	6	0.00	0.01
Coconut	136	0.05	0.02 [MM]	85	0.15	0.07 [MM]	49	0.04	0.01 [MM]	2	0.00	0.00
Coffee	20	0.01	0.00 [M]	1	0.00	0.00	18	0.02	0.00	1	0.00	0.00
Cola Nut	29	0.01	0.00	2	0.00	0.00	25	0.02	0.01	2	0.00	0.00
Cotton	16	0.01	0.00 [M]	1	0.00	0.00	0			15	0.02	0.00
Egg Plant	668	0.19	0.22	178	0.24	0.28	395	0.26	0.23	95	0.09	0.13
Leafy Vegetables	525	0.19	0.10 [MM]	17	0.03	0.02	125	0.08	0.08	383	0.41	0.30 [MM]
Maize	2387	0.75	0.67 [MM]	517	0.73	0.75	1182	0.78	0.68 [MM]	688	0.74	0.52 [MM]
Mango	302	0.09	0.09	61	0.10	0.07	212	0.14	0.12	29	0.03	0.02
Oil Palm	817	0.27	0.21 [MM]	201	0.33	0.21 [MM]	568	0.42	0.26 [MM]	48	0.05	0.03
Okra	1335	0.43	0.36 [MM]	177	0.24	0.27	594	0.38	0.36	564	0.59	0.48 [MM]
Onion	269	0.07	0.10 [F]	51	0.07	0.07	170	0.10	0.12	48	0.04	0.07
Oranges	310	0.11	0.06 [MM]	58	0.18	0.07 [MM]	239	0.18	0.09 [MM]	13	0.01	0.01
Other Vegetables	155	0.06	0.03 [MM]	1	0.00	0.00	62	0.04	0.03	92	0.10	0.05 [M]
Pawpaw	505	0.15	0.16	96	0.12	0.15	369	0.25	0.21	40	0.05	0.02
Peanut	652	0.23	0.12 [MM]	53	0.06	0.10	71	0.04	0.04	528	0.56	0.42 [MM]
Pepper	1747	0.54	0.52	355	0.51	0.50	933	0.59	0.58	459	0.49	0.37 [MM]
Pineapple	300	0.10	0.07 [MM]	95	0.15	0.11	186	0.14	0.07 [MM]	19	0.02	0.01
Plantains	1438	0.42	0.48 [FF]	263	0.40	0.33	1064	0.68	0.65	111	0.11	0.13
Rice	299	0.13	0.02 [MM]	2	0.00	0.01	71	0.06	0.01 [MM]	226	0.27	0.06 [MM]
Sorghum/Millet	529	0.22	0.04 [MM]	0			3	0.00	0.00	526	0.61	0.21 [MM]
Sugar Cane	49	0.02	0.01 [MM]	26	0.05	0.01 [M]	19	0.02	0.00 [MM]	4	0.00	0.01
Sweet Potatoes	68	0.02	0.02	22	0.03	0.03	21	0.01	0.02	25	0.03	0.02
Tobacco	26	0.01	0.00 [MM]	0			0			26	0.03	0.01
Tomatoes	1135	0.35	0.34	289	0.39	0.44	575	0.38	0.33 [M]	271	0.28	0.25
Yam	1243	0.41	0.31 [MM]	103	0.16	0	734	0.49	0.42 [MM]	406	0.45	0.22 [MM]
No.*	3278	2242	1036	704	433	271	1588	1001	587	986	808	178

* No. is the denominator in the fractions [FF (MM)] women (men) growing crop/all women (men) growers > men (women) growing crop/all men (women) growers significant at the .01 level [F (M)] at the .05 level (only reported if there are sufficient observations to calculate it.)

Table 4. Gender Patterns of Cropping by the Gender of the Person Keeping the Revenue from the Plot of Land on Which the Crop Was Grown, Ghana 1991-92.

	Total MF keep revenue	% of M holders keep rev	% of F holders keep rev	Total MF keep revenue	% of M holders keep rev	% of F holders keep rev	Total MF keep revenue	% of M holders keep rev	% of F holders keep rev	Total MF keep revenue	% of M holders keep rev	% of F holders keep rev
	Ghana			**Coastal Zone**			**Forest Zone**			**Savannah Zone**		
Avocado Pear	347	0.11	0.10	37	0.07	0.03 [M]	302	0.21	0.16 [M]	8	0.01	0.00
Bananas	396	0.13	0.10 [MM]	56	0.09	0.06	302	0.22	0.14 [MM]	38	0.04	0.03
Beans/Peas	457	0.18	0.06 [MM]	56	0.08	0.07	70	0.05	0.03 [M]	331	0.38	0.15 [MM]
Cassava	1928	0.69	0.61 [M]	465	0.69	0.61 [M]	1070	0.72	0.59 [MM]	393	0.40	0.40
Cocayam	1141	0.34	0.37	176	0.27	0.22	844	0.55	0.50 [M]	121	0.12	0.15
Cocoa	431	0.15	0.10 [MM]	43	0.07	0.04	383	0.30	0.15 [MM]	5	0.00	0.01
Coconut	109	0.04	0.02 [MM]	65	0.12	0.05 [MM]	42	0.04	0.01 [MM]	2	0.00	0.00
Coffee	17	0.01	0.00	1	0.00	0.00	15	0.01	0.00	1	0.00	0.00
Cola Nut	28	0.01	0.00 [M]	2	0.00	0.00	24	0.02	0.01	2	0.00	0.00
Cotton	6	0.00	0.00	1	0.00	0.00	0			5	0.01	0.00
Egg Plant	566	0.17	0.17	147	0.21	0.20	329	0.23	0.17 [MM]	90	0.09	0.10
Leafy Vegetables	377	0.14	0.06 [MM]	14	0.02	0.01	115	0.07	0.07	248	0.29	0.10 [MM]
Maize	1944	0.63	0.51 [MM]	415	0.60	0.57	967	0.66	0.53 [MM]	562	0.62	0.37 [MM]
Mango	274	0.09	0.07	56	0.09	0.06 [M]	189	0.13	0.10	29	0.03	0.01
Oil Palm	698	0.23	0.17 [MM]	168	0.29	0.15 [MM]	484	0.36	0.22 [MM]	46	0.05	0.03
Okra	1082	0.36	0.27 [MM]	147	0.21	0.21	492	0.33	0.28	443	0.48	0.29 [MM]
Onion	228	0.07	0.08	46	0.06	0.07	137	0.09	0.09	45	0.04	0.06
Oranges	278	0.10	0.06 [MM]	50	0.10	0.03 [MM]	216	0.17	0.08 [MM]	12	0.01	0.01
Other Vegetables	123	0.05	0.02 [MM]	1	0.00	0.00	50	0.04	0.02	72	0.08	0.02
Pawpaw	436	0.14	0.13	78	0.11	0.11	320	0.22	0.17 [M]	38	0.04	0.02
Peanut	521	0.19	0.09 [MM]	44	0.05	0.08	63	0.04	0.04	414	0.45	0.30 [MM]
Pepper	1420	0.46	0.38 [MM]	297	0.45	0.37 [M]	749	0.50	0.43 [MM]	374	0.41	0.23 [MM]
Pineapple	256	0.09	0.06 [MM]	79	0.12	0.06 [MM]	159	0.06	0.04	18	0.02	0.01
Plantains	1198	0.36	0.37	221	0.35	0.26 [M]	874	0.58	0.50 [MM]	103	0.11	0.10
Rice	245	0.10	0.01 [MM]	1	0.00	0.00	61	0.06	0.01 [MM]	183	0.22	0.03 [MM]
Sorgham	382	0.16	0.02 [MM]	0			3	0.00	0.00	379	0.45	0.11 [MM]
Sugar Cane	38	0.01	0.00 [M]	24	0.05	0.01	13	0.01	0.00	1	0.00	0.00
Sweet Potatoes	51	0.02	0.01	17	0.03	0.01	14	0.01	0.01	20	0.02	0.02
Tobacco	23	0.01	0.00 [MM]	0			0			23	0.03	0.00
Tomatoes	936	0.30	0.25 [MM]	239	0.35	0.32	465	0.33	0.24 [MM]	232	0.24	0.20
Yam	1048	0.36	0.24 [MM]	93	0.15	0	607	0.42	0.32 [MM]	348	0.39	0.18 [MM]
No. *	2560	2242	1036	553	433	271	1245	1001	587	762	808	178

* No. is the denominator in the fractions [FF (MM)] women (men) keeping revenue /all women (men) growers > men (women) keeping revenue /all men (women) growers significant at the .01 level [F (M)] at the .05 level (only reported if there are sufficient observations to calculate it.)

Table 5. Descriptive Statistics on Female Farmers, by Crop, Ghana 1991-92.

	All Women Holding Land	Women Holding Land on Which The Following Crops are Grown:				
		Cocoa	Yam	Cassava	Cocoyam	Maize
Age	44.6	52.2 **	44.9	45.3	43.8	44.7
Education -years	2.8	2.2 *	3.4 **	2.9	3.6 **	2.9
Female-headed household	0.74	0.92 **	0.89 **	0.84 **	0.83 **	0.80 **
Household size	4.7	4.7	4.7	4.6	4.6	4.6
Household income	359,545	406,898	400,065 *	362,070	382,021	360,505
Christian	0.70	0.80 **	0.76 **	0.75	0.78 **	0.73
Muslim	0.06	0.04	0.06	0.05	0.05	0.06
Other Religion	0.23	0.16 *	0.17 **	0.19	0.16 **	0.21
Language—Akan	0.58	0.76 **	0.71 **	0.64 *	0.72 **	0.62 *
Language -- Ewe	0.13	0.03 **	0.06 **	0.14	0.05 **	0.14
Language -- Ga	0.07	0.04	0.03 **	0.06	0.07	0.07
Language-- Other	0.22	0.16 *	0.19	0.16 *	0.15 **	0.16 **
N=	1031	122	319	218	477	701

* Significantly different from the mean of all women holding land at the .05 level, ** at the .01 level

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