Gender Gaps in Rural Household Heads' Sources and Access to Agricultural Resources: A Case Study of Osun State, Nigeria

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Abstract

The study investigated gender differences in farming rural household heads' sources and ease of access to agricultural resources with the purpose of inferring implications for food security and sustainable agricultural development in Nigeria.

The study was conducted among 119 male and 41 female household heads selected via simple random sampling procedure. Data for the study was elicited from the respondents using duly pre-tested and structured interview schedule. Most of the Male Household Heads (MHHs) and Female Household Heads (FHHs) acquired their farmland through inheritance from their parents and husbands respectively. Personal savings was the most common source of capital to both MHHs and FHHs, while bank/financial institutions served as no alternative source to the FHHs but MHHs. There was no significant difference between MHHs' and FHHs' ease of access to major agricultural resources such as: capital, land, labor, extension services, in-organic fertilizer, herbicides, and tractor in the study area, with the exception of access to seedlings and livestock feeds. Hence, involvement of women in decision making (such as in household headship) empowers them socio-economically and could contribute significantly to bridging the traditionally created gender gaps in the Nigerian socio-economic pyramid. Socio-economic empowerment of women farmers through their involvement in decision making could therefore be significant to the attainment of food security and sustainable agricultural development in Nigeria, where women are the majority of the agricultural workforce.

Keywords: gender, household heads, agricultural resources, Nigeria

Introduction

Headship of household is a widely and socially accepted position traditionally ascribed to men in most developing countries. In Africa, a trend has been observed that the eldest male in the household is automatically designated as the head of household (Templeman and Keita, 2005). However, it has been proven that most of the recognized male headed households are being maintained by women (Robert, 2004; Social Development, 2007). Tripathy and Keita (2005) reported that the number of female headed households is increasing significantly in the rural areas of most developing countries as rural men migrate to the urban areas in search of income generating opportunities.

The recent increase in female headed households and its socio-economic consequences promoted its emergence as a subject of social concern in both developed and developing countries. Among the many factors responsible for the increase in female headed households, are: marriage dissolution such as separation, divorce, widowhood; sex-specific migration; rising mortality or low average life-span among men due to chronic sicknesses (Quisumbing, 1996; Mookodi, 2004); and civil conflict or war (where able men die in the course of defending their

communities or countries). Generally men migrate (leaving their family members behind) from rural to rural or rural to urban areas in search of better livelihood, while women migrate (usually with their children and other dependants) to another locality thereby becoming the households' heads in the place of destinations.

Most members of rural households in many developing countries are farmers by primary occupation. Traditionally in Nigeria, the household heads are responsible for decisions concerning procurement of resources for domestic and economic purposes. The conceptual definition of headship of household generally revolves round the possession of control, and authority over other people without appropriate consideration for who bears the socio-economic responsibilities attached to the position. Social and economic responsibilities are the cores of household livelihood, which in most cases are shared between the men and women in the household. Easy access to agricultural resources is germane to improved agricultural production and food security at the household, community as well as national levels.

Food security is a pre-requisite to equitable economic development and indeed a critical factor for economic and social stability in every household. Vennema (2001) declared that food security is when all people have access, at all times, and to sufficient food to meet their dietary needs for healthy and productive life. Accessibility is dependent on the availability of food, which when properly utilized could help in alleviating hunger, which is a severe manifestation of poverty (World Food Program, 1979). Food security at household level can be appropriately termed "meal security" which is access to adequate and appropriate meal by every member of the household, regardless of their age and gender. Meal security means provision of equal and regular access to appropriate and adequate meal required for healthy living and improved productivity, by all household members. The concept of meal security looks beyond accessibility to enough food required for daily living by all household members, but also included the appropriateness of the meal in terms of quality, without age and gender bias. Meal security looks beyond quenching of hunger, but is also concerned about deriving the appropriate nutrient and satisfaction from the meal after consumption by the individual household member. When meals are secured at the farming household level, household members will possess the required strength to carry out their traditional roles in agricultural production. Meal security at the household level is significant to food security at the community and national levels, especially in developing countries where family members play significant roles in agricultural production.

Both men and women farmers play critical roles in agricultural production, however, women, despite their heavy domestic duties at household level (such as fetching water, preparing food, nursing the infants and caring for the old and sick family members) are still responsible for half of the world food production by accounting for between 60 and 80 percent of the food in most developing countries (Lloyd and Brandon, 1993). Women provide labor for most field operations from sowing to post harvest activities while men's social responsibilities are usually land clearing and ploughing. Women are mostly engaged in food crop and livestock production while most men are often involved in tree crop production in most developing countries. Although, women are the majority of agricultural labor force in Nigeria, they are traditionally denied free access to most agricultural resources that could enhance their production. An interesting research question could be: does household headship by women significantly influence their access to agricultural resources in Nigeria? Unfortunately, gender disaggregated data on household heads' access to agricultural resources in Nigeria required to answer this research question was scanty in the literature; hence the study was conceived to reveal the gender disparity in rural farming household heads' access to agricultural resources in Nigeria in order to contribute to bridging the identified research gap.

Materials and Methods

The research was conducted in Osun State, Nigeria, as case study. Farming male and female household heads in Osun State constituted the study population. Two farming zones (*Ife* and *Ijesa* zones) out of the six Agricultural Development Programs' (ADPs) zones in Osun State were

purposively selected. Two farming local government areas (LGAs) were purposively selected from each of the selected zones; viz: *Ife* central and *Ife* north, *Atakumosa* West and *Oriade* LGAs respectively. Two rural communities were purposively selected from each of the sampled LGAs. Twenty farming household heads were selected from each sampled community using the simple random sampling technique. The head of every randomly sampled household was eligible for interview; however in the absence of the selected household's head, the head of the next household was interviewed. A total of 160 respondents (comprising 119 male and 41 female household heads) were interviewed via pre-tested and structured interview schedule. Agricultural resources that were found available to the farmers in the study area included land, capital, labor, extension services, and agricultural inputs such as: seedlings, inorganic fertilizer, herbicides, livestock-feed and tractor services (preliminary survey conducted before the data collection).

The data collected was subjected to both descriptive and inferential statistical analysis. The descriptive analytical tools used included percentage and frequency counts while Analysis of Variance (ANOVA) statistical test was employed to ascertain the significance of the difference between MHHs' and FHHs' ease of access to the selected agricultural resources in the study area.

Measurement of Variables

The dependent variable of the study was ease of access to the identified agricultural resources in the study area by the household head. Level of ease of accessibility was measured using a 4-point scale, which consists of: "very easy", "easy", "difficult", and "very difficult" levels. The independent variable was the gender of each respondent, i.e. male or female household-head. Male was coded 01 while female was coded 02, on equal value basis.

Results and Discussion

Regular Sources of Agricultural Resources to MHHs and FHHs

Data in Table 1 reveal that majority (66.4%) of the male household heads (MHHs) inherited their farmland, 10.1 percent purchased theirs, 22.7 percent leased or rented, and 0.8 percent got their farmland from other sources such as pledges, gifts, etc. Similarly highest proportion (53.7%) of the female household heads (FHHs) inherited their farmland from their husbands, 2.4 percent purchased the land, 39 percent rented, while 4.9 percent got their farmland through other means, such as pledges, gifts, etc. Inheritance was the most popular means of acquiring farmland among both MHHs and FHHs. All the FHHs that claimed to have acquired their farmland through inheritance took over the ownership of the household's farmland in the absence of their husbands, and not usually through inheritance from parents (detailed analysis during data collection). Most often, female ownership over inherited land and landed properties is temporary in many parts of Nigeria, because the land can be taken away at any time either by the returning husband, the husband's family members, or male relatives. Although the prevailing traditional or communal land tenure system in Nigeria favors male inheritance of land and landed properties from parents, this study confirms that headship of household by females gives them opportunity of free access and control over land.

Most MHHs and FHHs got capital for their farming enterprises through personal savings, but a higher percentage of MHHs (57.1%) than FHHs (51.2%) was recorded (Table 1). Furthermore, MHHs of about 11.8, 28.6 and 2.5% got capital from friends/relatives, cooperative societies and banks/financial institutions respectively. However, about 12.2 and 36.6% of the FHHs got capital from friends/relatives and cooperative societies respectively while none of the FHHs claimed bank or financial institutions as their sources of capital. Personal savings was the major source of capital to both MHHs and FHHs while bank/financial institutions served as no alternative source to FHHs but to MHHs alone.

Majority (74.8%) of the MHHs hired/employed labor, 18.5 percent regularly used family labor, and 6.7 percent regularly utilized relatives/ friends for their farm activities. Comparatively, majority of the FHHs (68.3%) likewise used employed/hired labor, 24.47 percent regularly utilized family labor, while 7.3 percent used friends/relatives for their farm activities. Lack of permanent ownership and control

Table 1 Distribution of respondents by regular sources of agricultural resources.

	MHHs Frequency (n=119)	Percentage	FHHs Frequency (n= 41)	Percentage
Land				
Inherited	79	66.4	22	53.7
Purchased	12	10.1	1	2.4
Leased/rented	27	22.7	16	39.0
Others	1	0.8	2	4.9
Capital				
Personal savings	68	57.1	21	51.2
Friends/relatives	14	11.8	5	12.2
Cooperative society	34	28.6	15	36.6
Bank	3	2.5	0	0
Labor				
Household members	22	18.5	10	24.4
Hired/employed	89	74.8	28	68.3
Relative/friends	8	6.7	3	7.3
Contact with extension agents				
Yes	105	88.2	33	80.5
No	14	11.8	8	18.5
Major source of extension services				
ADPs	81	68.1	29	70.7
Ministry of Agriculture	14	11.8	2	4.9
Research institutes	10	8.4	2	4.9
Not applicable	14	11.8	8	19.5
Frequency of contacts with extension agents				
10 and below	63	52.9	24	58.5
11-20	25	21.0	9	22.0
21-30 and above	17	14.3	0	00.0
Not applicable	14	11.8	8	19.5

Source: Authors' field work (2008).

over land by FHHs and the high level of poverty among the rural women farmers in Nigeria might have contributed to their lower investment on their farmland in the form of employing hired labor, when compared with the MHHs. Increase in awareness of the significance of western education might have being one of the contributing factors to the low level of use of family labor for farming activities as revealed in this study.

Furthermore, a greater proportion (88.2%) of the MHHs had contact with extension agents in the last three years while 11.8 percent had not, as compared to 80.5 percent of the FHHs that also claimed contact with extension agents. Furthermore, majority (68.1%) of the MHHs got extension service from Agricultural Development Programs (ADPs), while 11.8 and 8.4 percent claimed Ministry of Agriculture and Research Institutes respectively, as their regular sources of extension services. Majority of the FHHs (70.7%) had extension service from ADPs, while 4.9 percent, each, had the service from the Ministry of Agriculture and Research Institutes respectively. In view of frequency of contact with extension agents, about 58.5 and 52.9 percents of FHHs and MHHs respectively had extension contacts about 10 times in the last three years. About 22 percent of the FHHs compared with 21 percent of the MHHs had extension contact between 11 and 20 times in the last three years. However, about 14.3 percent MHHs had between 21 and 30 times, while none of the FHHs had contact with the extension agents for

more than 20 times in the last three years. On the average, MHHs had more contacts with extension agents than the FHHs in the last three years in the study area. There is need to improve gender mainstreaming strategies in the agricultural extension services in Nigeria, in order to enhance female farmers' access to agricultural innovations and information through extension services for improved agricultural production.

Seedlings

Purchase (77.3%; 61%), and self (55.5%; 48.8%) were the regular sources of seedlings planted by MHHs and FHHs respectively, while some of the MHHs (45.4%) and FHHs (49.3%) purchased their seedlings usually from ADPs (Table 2). It is expected that ADPs were the major sources of purchase of seedlings to both MHHs and FHHs in the study area, because it is a government owned extension service agency that operates at subsidized rates. Purchase from open markets, which is usually without subsidy, influences high cost of agricultural production positively. Irregular availability of other sources of acquiring agricultural inputs and resources was given as one of reasons for farmers patronizing open markets, which in comparison, was costlier but are usually locally available and accessible to all farmers.

Table 2 Distributions of respondents by regular sources of seedling.

	MHHs Frequency (n=119)	Percentage	FHHs Frequency (n= 41)	Percentage
Seedlings				
Produced by self				
Yes	66	55.5	20	48.8
No	53	44.5	21	51.2
Received as gift				
Yes	19	16.0	12	29.3
No	100	84.0	29	70.7
Purchased				
Yes	92	77.3	25	61.0
No	27	22.7	16	39.0
Where usually purchased from?				
ADPs				
Yes	54	45.4	18	43.9
No	56	47.1	18	43.9
Not applicable	9	7.6	5	12.2
Ministry of Agriculture				
Yes	10	8.4	2	4.9
No	100	84.4	34	82.9
Not applicable	9	7.6	5	12.2
Open markets				
Yes	32	26.9	4	9.8
No	78	65.6	32	78.0
Not applicable	9	7.6	5	12.2
Cooperative societies				
Yes	1	0.8	12	29.3
No	109	91.6	24	58.5
Not applicable	9	7.6	5	12.2

Source: Authors' field work (2008).

Inorganic Fertilizers and Herbicides

Agricultural Development Programs (ADPs) (49.6%; 56.1%) and open markets (37.8%; 36.6%) were the most regular sources of in-organic fertilizer to MHHs and FHHs respectively (Table 3). Most MHHs and FHHs (48.8%, 51.2% respectively) got herbicides from ADPs. Open market was also a regular source of herbicides to few MHHs (24.4%) and FHHs (19.5%). ADPs were the major sources of in-organic fertilizer to both MHHs and FHHs in the study area. However, MHHs had more sources of procuring in-organic fertilizer than FHHs in the study area. Application of in-organic fertilizer was a common practice for agricultural intensification among Nigerian farmers. Despite its negative consequences on the environment, farmers still prefer it to the organic fertilizer, which was cheaper and locally available.

Table 3 Distributions of respondents by regular sources of in-organic fertilizer and herbicides.

	MHHs Frequency (n=119)	Percentage	FHHs Frequency (n= 41)	Percentage
In-organic fertilizer				
ADPs				
Yes	59	49.6	23	56.1
No	55	46.2	17	41.5
Not applicable	5	4.2	1	2.4
Ministry of agriculture				
Yes	13	10.9	2	4.9
No	101	84.9	38	92.7
Not applicable	5	4.2	1	2.4
Open markets				
Yes	45	37.8	15	36.6
No	69	58.0	25	61.0
Not applicable	5	4.2	1	2.4
Cooperative societies				
Yes	1	0.8	0	0.0
No	113	95.0	0	0.0
Not applicable	5	4.2	0	0.0
Herbicides				
ADP				
Yes	58	48.8	21	51.2
No	55	46.2	18	43.9
Not applicable	6	5.0	2	4.9
Ministry of agriculture				
Yes	22	18.5	9	22.0
No	91	76.5	30	73.2
Not applicable	6	5.0	2	4.9
Open markets				
Yes	29	24.4	8	19.5
No	84	70.6	31	75.6
Not applicable	6	5.0	2	4.9
Cooperative societies				
Yes	1	0.8	0	0.0
No	112	94.2	0	0.0
Not applicable	6	5.0	0	0.0

Source: Authors' field work (2008).

Livestock-Feed and Tractor

Most FHHs (56.1%) got their livestock-feeds from ADPs, while open markets (18.5%) were the most popular sources of livestock-feeds among MHHs (Table 4). Traditionally in Nigeria, more females than males are involved in livestock keeping, which might have influenced the higher proportion of the FHHs that claimed purchase as a means of getting feeds for their livestock in the study area. Use of tractor for land clearing was not popular among both MHHs and FHHs in the study area. Detailed analysis during data collection for the study revealed that high cost and inadequate availability of tractor services were the main reasons for its low adoption among the farmers. Some other reasons given were that use of tractor for land clearing enhances weed growth and compact the soil thereby making manual hoeing difficult for the farmers. However, few MHHs and FHHs that used tractor services usually hired it from the ADPs (25.2%; 12.2%), Ministry of Agriculture (15.1%; 4.8%) and Cooperative societies (5%; 2.4%) respectively. Use of tractors for land clearing could be an effective strategy for agricultural mechanization and improved agricultural production; hence its accessibility to both male and female farmers is relevant to the attainment of food security, both at the household and national levels in Nigeria.

Results of the Tested Hypothesis of the Study

The null hypothesis set for the study states that: There is no significant difference between MHHs' and FHHs' ease of access to selected agricultural resources.

Table 4 Distributions of respondents by regular sources of livestock feed and tractor services.

	MHHs Frequency (n=119)	Percentage	FHHs Frequency (n= 41)	Percentage
Livestock- feed				
ADPs				
Yes	11	10.1	3	56.1
No	31	26.1	21	41.5
Not applicable	76	63.9	17	2.4
Ministry of agriculture				
Yes	2	1.7	0	0.0
No	41	34.5	0	0.0
Not applicable	76	63.9	0	0.0
Open markets				
Yes	22	18.5	13	31.7
No	21	17.6	11	26.8
Not applicable	76	63.9	17	41.5
Tractor				
ADP				
Yes	30	25.2	5	12.2
No	25	21.0	6	14.6
Not applicable	64	53.8	30	73.2
Ministry of agriculture				
Yes	18	15.1	2	4.8
No	37	31.1	9	22.0
Not applicable	64	53.8	30	73.2
Cooperative societies				
Yes	6	5.0	1	2.4
No	49	41.2	10	24.4
Not applicable	64	53.8	30	73.2

Source: Authors' field work (2008).

Data in Table 5 revealed that (at $P \leq 0.05$) there was no significant difference between MHHs' and FHHs' ease of access to capital, land, labor, extension services, in-organic fertilizer, herbicides and tractor services in the study area. Headship of household by females empowers them to have direct access to most of the agricultural resources such as capital, land, and labor, which they would not have been traditionally given free access to in a typical Nigerian society, hence the lack of significance difference between the MHHs' and FHHs' ease of access to these resources might have been influenced by this fact. This is a proof that involvement of women in decision making at the household and community levels could contribute significantly to bridging the gender gap in the socio-economic pyramid of Nigeria, especially at the rural community level. Consequently, women farmers who are the majority of the agricultural workforce in Nigeria will be empowered to improve their agricultural production for enhanced food security and alleviation of the feminized rural poverty in Nigeria.

There was a significant difference between MHHs' and FHHs' ease of access to seedlings ($F = 4.679$; $P = 0.03$) at 0.05 level of significance, probably because a higher percentage (29.3%) of the FHHs than MHHs (16%) claimed that they usually received seedlings as gifts from neighbors and friends (Table 2). In addition, there was a significant difference between MHHs' and FHHs' ease of access to livestock feeds ($F = 7.738$; $P = 0.01$). Rearing and feeding of livestock (including those owned by men) are traditionally females' responsibilities in a typical Nigerian rural household; this might have contributed to the observed significant gender difference in the household heads' ease of access to livestock feed in the study area.

Lack of significant difference between MHHs' and FHHs' ease of access to capital, land, labor, extension services, in-organic fertilizer, herbicides, and tractor (Table 5) might be inferred from the general inadequate availability of most of these resources to average farmers in Nigeria. Access to in-organic fertilizer, herbicides, and tractor is usually determined by possession of capital, because most of these resources are available in open markets and can be purchased without gender preference. Furthermore, small-scale farmers who farm on fragmented lands are the majority of the Nigerian farmers, a situation that does not support economical use of tractor for farming.

Implications for Food Security and Sustainable Agricultural Development in Nigeria

The result of this study confirms that there is an interwoven relationship between food insecurity, poverty, and gender inequality in access to agricultural resources in Nigeria; this is in agreement with many research findings. Food and Agriculture Organization (FAO, 2003) declared that about 852 million people are chronically hungry due to extreme poverty, while up to 2 billion people lack food security intermittently due to varying degrees of poverty, globally. About 70 percent of the population in the developing countries live in the rural areas and have agriculture as their major occupation; hence agricultural development among smallholder farmers and landless people provides livelihood for people and gives them opportunity to stay in their communities (Anonymous, 2009).

Free and easy accessibility to agricultural resources, especially among women, has been proven to be a significant factor for improved agricultural production (Fletschner, 2008; Wiley-Blackwell, 2008). World Development Report (2008) concluded that the potential of agriculture to contribute to poverty reduction depends on the productivity of the small-scale farmers, especially in the developing countries such as Nigeria which depends largely on small-scale agricultural production.

Lack of significant gender difference in household heads' access to agricultural resources such as land, capital and labor, etc; as revealed in this study, is a proof that involvement of women in decision making empowers them socio-economically and could contribute significantly to bridging the traditionally created gender gaps in the socio-economic pyramid of Nigeria. Although, household headship saddled women with some of the socially and culturally defined men's responsibilities in addition to their naturally given roles as wives and mothers in the family, the result of this study shows that it has the advantage of empowering the women socio-economically. Socio-

Table 5 Result of ANOVA test of the difference between MHHs' and FHHs' ease of access to Agricultural resources.

Variables	F-Value	Level of Significance (P)
Capital	0.622	0.43
Land	0.571	0.45
Labor	0.043	0.84
Extension services	0.216	0.64
In-organic fertilizer	0.005	0.94
Seedlings	4.679	0.03*
Herbicides	0.529	0.47
Livestock's feed	7.738	0.01*
Tractor	2.791	0.10

* Significant at $P < 0.05$

economic empowerment of women farmers could have positive implications for food security and attainment of sustainable agricultural development in Nigeria, where women are the majority of the agricultural workforce. The prevailing food insecurity in Nigeria is an outcome of the feminized poverty looming large in its rural areas, where agriculture is the primary occupation of the majority. Involvement of women in decision making (such as household headship) empowers them socio-economically, and could have positive impact on the entire household members' livelihood, because most rural women usually spend their resources on their household members' welfares, while most rural men spend their resources to procure fixed assets and marrying more wives, which may not have much direct positive impacts on the household members' livelihoods. Rural household members are key stakeholders in agricultural production in Nigeria, hence could be significant targets in the pursuit of food security and sustainable agricultural development in Nigeria.

Conclusions

Most of the Male Household Heads (MHHs) and Female Household Heads (FHHs) acquired their farmlands through inheritance from parents and husbands respectively. Personal savings was the most common source of capital to both MHHs and FHHs, while bank/financial institutions served as no alternative source to the FHHs but MHHs. There was no significant difference between MHHs' and FHHs' ease of access to capital, land, labor, extension services, in-organic fertilizer, herbicides, and tractor in the study area. However, there was significant difference between MHHs' and FHHs' ease of access to seedlings and livestock feeds in the study area. Headship of household by women empowers them to have direct access to and control over agricultural resources, hence the lack of significant difference between the MHHs' and FHHs' ease of access to major agricultural resources such as capital, land, labor, extension services, in-organic fertilizer, herbicides, and tractor, as revealed by this study. Involvement of women in decision making at the household and community levels could contribute significantly to bridging the culturally created gender gaps in the Nigerian socio-economic pyramid. Consequently, when women who are the majority of agricultural workforce in Nigeria are socio-economically empowered, agricultural production would be enhanced; food security and sustainable agricultural development would be feasible in Nigeria.

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