

Gender-labour implications for food crop production: evidence from farm households in Kaduna State of Nigeria

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ABSTRACT

Despite the important roles that women play in farm and household production, they have not been given due recognition in agricultural sector. A study was conducted in Kaduna State with 120 farm households to examine the extent of involvement of both men and women in the production of food crops. It was observed that men in northern Kaduna carried the major responsibility for farm work, while in southern Kaduna men and women play equally important roles in terms of labour contribution to farm production. In order to give women opportunity to participate effectively in agriculture, disparity between them and men has to be removed by reviewing land right policies for gender equity and women's land rights.

INTRODUCTION

Over the past several decades, awareness of gender issues in development has steadily increased. According to Malena (1994), there are at least three different, but interrelated schools of thought as to why gender matters can be identified in current development studies. These might be referred to as the equity approach, the developmental approach and the efficiency approach. Women across the developing world are disadvantaged relative to men. Under male-dominated social structures and political systems, women are denied equal access to land, technology, education and resources. As a result, rate of poverty, illiteracy, malnutrition and premature death are significantly higher among women and girls than they are among men and boys (Horenstein, 1989).

The equity approach argues that any meaningful development strategy must actively attempt to correct these gender inequalities. Genuine and balanced development and growth will be achieved only when gender inequalities have been redressed. Rather than focusing on the inequalities between women and men, the developmental approach merely asserts that if development is aimed at helping the poor, and if a majority of the poor are women, then development means, by definition, helping women. Despite the self-evidence of this fact, the reality has been that, either through ignorance or error, women have largely been excluded from the development process. A further point made by advocates of the developmental approach is that women may have a unique role to play in development. Because women tend to be responsible for the care of children, the aged and the infirm, attempts to improve the welfare of these 'vulnerable' groups must involve women.

In developing countries like Nigeria, women make a significant

contribution to food production and are exclusively responsible for food processing and meal preparation. Studies from several countries show that women's working day is, on average, longer than that of men. Gabriel (1991) reports a 16-hours working day for African farming women at certain times of the year, while Whatmore (1991) point out that no matter the extent of women's agricultural activities, there is little variation in the extent to which domestic labour is shared by other members of the households.

One of the major concerns in the last three decades in Nigeria has been how to develop the agricultural sector for self-sufficiency in food production. Population pressure, especially urban population is a significant factor that exerts pressure on the increased demand for food. Expenditure on food in Nigeria accounts for approximately 72 per cent of total households' expenditure (CBN, 1998). This phenomenon necessitates that the production of food crops be increased to meet the growing demand. Increasing the representation and recognition of women in agriculture could be a good step towards attaining self-sufficiency in food production.

Despite the important roles that women play in agriculture as regards farm production, processing, marketing, employment and decision-making, they face more economic, social and political barriers than do the men (Rahman and Haruna, 1999). There are several socio-economic factors that determine their interest and involvement in agriculture (Rahman *et al.*, 2002). Women participation in agricultural activities has for long been recognized; especially in Nigeria where women contribute between 60 and 80 per cent of agricultural inputs (Ingawa, 1999).

This implies that women play a dominant role in agriculture, but they are hardly trained and reached by extension agents with improved technologies (Ngur, 1987).

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Banks hardly give them loans and they are hardly reached with improved seeds, fertilizers and other inputs (Saito and Spurling, 1992). These factors have to a large extent, perpetuated and exacerbated poverty among women and hence intensifying gender inequalities in our societies.

In order to address the problem of food insecurity in developing nations like Nigeria, the role of women in farm production has to be recognized and improved. This is because almost all the agricultural operations such as planting, weeding, harvesting, threshing, transplanting and marketing activities are performed by women in addition to animal husbandry practices, crafts and construction duties (Ogungbile and Olukosi, 1985). This study seeks to examine and compare the extent and relevance of both men and women involvement in the production of food crops in two geographical locations (northern and southern parts) of Kaduna State in Nigeria.

The specific objectives of the study include:

- (i) to describe socio-economic characteristics of farm households in the study area.
- (ii) to analyse time budget in farm households.
- (iii) to determine gender-labour differentials by cropping systems and farm operations.

METHODOLOGY

The study used mainly primary data. The relevant primary data were obtained through a survey of farm households. The main instrument for data collection was structured questionnaire administered on farm-families. Multi-stage random sampling techniques were employed in the selection of a sample of 160 farm households during the cropping season of year 2002. First, the study area was categorized on the basis of geographical locations - Northern and Southern, Kaduna. Secondly, from each location, two Local Government Areas (LGAs) were randomly selected. Thirdly, two villages were randomly selected per LGA. Finally, there was a random selection of sample farm households from the selected villages. In each of the eight selected villages, twenty farm households were randomly selected giving a

total of 160 sample farm households. But in the end, 120 farm-families were analysed as others were discarded for inconsistency or incompleteness of information.

Data collected covered household characteristics such as, land ownership, cropping systems and labour requirements for crop production. Descriptive and inferential statistics were employed in analyzing the data. The descriptive statistics such as mean and percentage were used to examine the household's characteristics and gender time budget. The t-statistic was employed to make inference on the gender-labour difference.

RESULTS AND DISCUSSION

Farm household characteristics

Table 1 presents the socio-economic characteristics of farm households in Northern and Southern Kaduna State). The mean age of a family and household size were about the same in the two locations. In northern Kaduna, about 43 per cent of children in a family were in school; while southern Kaduna recorded 100 per cent. This was in consonance with the existing disparity in literacy rates between northern and southern Kaduna. Both gender and residential differentials in the literacy rate vary considerably across the State.

In each of the geographical locations, there was a great disparity in literacy rate between male and female. In the northern Kaduna, female had 23.33 per cent literacy rate, whereas male had 45 per cent. In southern Kaduna, female had 42 per cent literacy rate, while male had 60 per cent. In both geographical locations, female literacy rates were substantially lower than those of the males.

Women's participation in agricultural and rural organizations (cooperatives) was low. The cooperative membership rates for men and women in northern Kaduna were 42.15 and 15.03 per cent respectively. In southern Kaduna, men and women's participation rates in cooperatives were 45.83 and 30.24 per cent respectively. The low rate of women participated at 30.24 per cent. Women low participation in cooperatives could be attributed to the high rate of illiteracy and inaccessibility to extension services.

Table 1. Socio-economic characteristics per farm-household in northern and southern Kaduna.

Characteristics	Northern Kaduna	Southern Kaduna
Mean age (yr)	38.00	40.00
Household size		
Male	4.00	4.00
Female	6.00	5.00
No. of children		
Male	3.00	3.00
Female	4.00	3.00
No. of children in school		
Male	1.00	3.00
Female	2.00	3.00
Literacy rate (%)		
Male	45.00	60.00
Female	23.33	42.00
Cooperative membership (%)		
Male	42.15	45.83
Female	15.03	30.24
Land owned by household (ha)	13.40	9.97
Area cultivated by		
Male (ha)	9.10	5.62
Female (ha)	0.46	2.94

There was also a great disparity between women and men in the size of land holdings in the study area. Greater portion of land owned by every household was cultivated by men. However, women in southern Kaduna seem to cultivate reasonable quantity of land for crop production. This implies that women in southern Kaduna had more access to land (2.94 ha) compared to those in northern Kaduna (0.46 ha).

Division of labour by gender

The time budget analysis presented in Table 2 indicates that women carry the major responsibility for both subsistence agriculture, especially food crop production,

and domestic work. This implies that women spend more hours per day than men in both productive and reproductive activities. In northern Kaduna, traditionally, women are mainly responsible for cooking (3 hrs/day), cleaning house (3 hrs/day), child care (2.5 hrs/day). The farm work is mainly the responsibility of the men (5 hrs/day). In southern Kaduna, both men and women participated fairly equally in farm works (4.5 and 4.2 hrs/day respectively).

Table 2. Time budget analysis per household in hours.

Chore	Northern Kaduna		Southern Kaduna	
	Male	Female	Male	Female
Farm work	5.00	0.50	4.50	4.20
Cooking	0.00	3.00	0.50	3.50
Fetching water	1.00	0.50	1.00	1.00
Fetching firewood	1.00	0.50	0.75	1.00
Cleaning house	0.00	3.00	0.75	1.25
Child care	0.20	2.50	0.50	1.50
Processing of farm products	0.20	1.50	0.50	1.00
Total	7.40	11.50	8.50	13.45

Women are also responsible for food preparation (3.5 hrs/day), fetching water (1 hr/day) and gathering firewood (1 hr/day). Generally, in Kaduna State, women contribute the majority of the labour for the farm-household activities. However, the decision-making at the household level continues to be male-dominated in all farming-related activities.

Gender-labour for selected cropping systems

In northern Kaduna, men still play a dominant role in agricultural production, in terms of labour force and farm decision-making. As presented in Table 3, for every cropping system investigated, labour input by men was higher than that contributed by the women. For instance, men contributed 241.77 hrs/ha under the maize/cowpea mixture while 70.46 hrs/ha were recorded for women. The difference in labour contribution between men and women for every cropping system was statistically significant at 5 per cent level of probability. The phenomenon of this nature has for long resulted into widespread assumptions that men- and not women-make the key farm management decision. As a result, agricultural extension services have traditionally been focused on men and their farm production needs, while neglecting the women. Most extension messages targeted at women usually emphasize their domestic role with topics on child care and family nutrition.

However, in southern Kaduna, women and men play an equally important role in terms of their labour contribution to farm production. The gender-labour differentials for all the cropping systems investigated were not significant statistically (Table 3). Despite the indifferent labour contribution, women have not been given due recognition in agricultural sector of the study area. Obstacles holding women back are literacy (42% as compared with 60% among men in southern Kaduna; see

Table 1), skill levels, access to technology, extension and training. Because many do not have the same education as men, training needs to be provided in local dialects. It is a fact that agriculture cannot thrive without the participation of women. Therefore, women need greater opportunities to make decisions on and off the field efficiently.

Gender relative involvement in crop production

The study observed that women in southern Kaduna were more involved in farm work than those in northern Kaduna. The women in northern Kaduna participated extensively in threshing operations where they contributed about 91 per cent of the labour for the threshing activity. The gender-labour difference for the threshing operation in northern Kaduna was statistically significant at 5 per cent level of probability (Table 4).

In southern Kaduna, both men and women participated fairly equally in land clearing, planting, fertilizer application and weeding activities. Women also carried the greater responsibility (contributing over 60 per cent of the total labour) for harvesting, transporting and threshing of farm produce. The men were observed to have played major role in only the ridging operation. Therefore, the gender-labour difference was statistically significant for ridging, harvesting, transporting and threshing activities. The labour force participation rate of women in southern Kaduna was greater than 50 per cent on the average.

Table 3. Gender-labour differentials (hours/ha) for selected cropping systems in northern and southern Kaduna.

Cropping system	Northern Kaduna					Southern Kaduna				
	Male labour	Female labour	GLD	SE	t-value*	Male labour	Female labour	GLD*	SE	t-value
Sole maize	196.12	61.22	134.90	42.29	3.19	141.22	138.31	2.91	2.15	1.44
Sole sorghum	203.45	58.05	145.40	53.26	2.73	160.18	149.93	10.25	9.23	1.11
Maize/cowpea	241.77	70.46	171.31	41.68	4.11	168.24	175.29	7.05	6.65	1.06
Maize/groundnut	211.34	45.92	165.42	83.55	1.98	146.15	152.13	5.98	4.56	1.31
Maize/soyabean	222.18	54.27	167.91	46.55	3.60	159.21	184.26	25.05	17.28	1.45
Sorghum/cowpea	250.06	65.39	184.66	72.42	2.55	184.05	203.00	18.95	15.66	1.21
Sorghum/groundnut	228.79	35.28	193.51	49.75	3.89	138.20	141.34	3.14	2.30	1.31
Sorghum/soyabean	243.52	49.11	194.41	71.21	2.73	143.11	158.98	15.87	9.98	1.59
Millet/cowpea	251.44	69.23	182.21	35.24	5.17	171.51	169.55	1.96	1.37	1.43
Millet/groundnut	236.04	45.95	190.09	41.06	4.63	153.06	150.87	2.19	1.87	1.17
Millet/soyabean	242.33	41.33	201.00	69.55	2.89	183.24	206.71	23.47	20.77	1.13

GLD = Gender-Labour Difference

SE = Standard Error

* = The t-values for all the cropping system are statistically significant at 5 per cent level.

Table 4. Average gender-labour contribution by operation in man-hours per hectare in northern and southern Kaduna.

Operation	Northern Kaduna					Southern Kaduna				
	Male labour	Female labour	GLD	SE	t-value	Male labour	Female labour	GLD	SE	t-value
Land clearing	25.13 (100.00)	0.00	25.13	NA	NA	17.11 (64.69)	9.34 (35.31)	7.77	5.95	1.31
Ridging	30.05 (100.00)	0.00	30.05	NA	NA	24.63 (68.21)	11.48 (31.79)	13.15	5.67	2.32*
Planting	20.14 (82.78)	4.19 (17.22)	15.95	5.10	3.13*	18.93 (53.03)	16.77 (46.97)	2.16	1.74	1.24
Fertilizer application	16.23 (85.92)	2.66 (14.08)	13.57	2.88	4.71	9.03 (51.16)	8.62 (48.84)	0.41	0.29	1.42
Weeding	78.49 (100.00)	0.00	78.49	NA	NA	41.25 (47.81)	45.03 (52.19)	3.78	3.20	1.18
Remoulding	27.21 (100.00)	0.00	27.21	NA	NA	19.67 (55.33)	15.88 (44.67)	3.79	2.53	1.50
Harvesting	65.04 (91.27)	6.22 (8.73)	58.82	9.28	6.34*	25.55 (34.12)	49.34 (65.88)	23.79	7.41	3.21*
Transporting	17.33 (68.28)	8.05 (31.72)	9.28	3.10	2.99*	11.06 (30.46)	25.25 (69.54)	14.19	5.24	2.71*
Threshing	3.11 (8.63)	32.92 (91.37)	29.8	9.09	3.28*	13.09 (31.75)	28.14 (68.25)	15.05	5.74	2.62*

Figures in parentheses are the percentages of the total labour for the corresponding operation.

NA = Not applicable

* = Significant at 5 per cent level.

CONCLUSION

Women have extensive workloads with dual responsibility for farm and household production. As primary providers of nutrition to the young children, women are the major decision-makers in ensuring nutrition to the next generation. Despite all these facts, women are often among the voiceless, particularly when it comes to influencing agricultural policies and projects.

This study conducted in Kaduna State serves as another evidence that women play a dominant role in agricultural production. But the traditional view of women's roles in farming has resulted in their being relegated to the status of a "hidden" workforce not given due recognition.

The results of the study revealed that women in Kaduna state participated greatly in both farm and household activities under obstacles such as low literacy rate, poor access to land, poor access to technology, extension and training. For women to participate efficiently in agricultural production, the problem of different forms of disparity between men and women has to be addressed. Effort should be made to increase women's access to: appropriate technology to reduce workload, extension and training, improved water supply, alternative energy sources, irrigation, credit, agricultural inputs, and cooperatives and rural associations.

The study, therefore, recommends that:

- (i) increased research on gender issues in agriculture is necessary.
- (ii) agricultural education institutions and training centers should develop regular curricula to integrate a gender approach in all technical areas of agricultural sector.
- (iii) review of the land right policies and implementation of land distribution for gender equity and women's land rights.

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