



## Gender analysis of labour contribution and decision making role among maize farming households in north-central, Nigeria

Umar,H.S and E.G.Luka

Department of Agricultural Economics and Extension, Nasarawa State University, Keffi, PMB 135, Shabu-Lafia Campus, Nigeria.

### ARTICLE INFO

#### Article history:

Received: 14 October 2011;

Received in revised form:

17 December 2011;

Accepted: 26 December 2011;

#### Keywords

Gender,  
Labour,  
Decision making,  
Farming household.

### ABSTRACT

*The Study examined gender-based labour contribution and decision making role among maize farming households in Lafia Local Government Area, North-central Nigeria. Data were collected using structured questionnaire from 60 households randomly selected and analyzed with descriptive statistics and decision making index (DMI). The results showed that Male members of maize farming households contributed 74% of the total household labour needed for maize production per hectare in the study area. However, labour contribution towards post-harvest farm operations by female farmers was 16% higher than that of male. Male farmers in maize farming households dominated decision making role for all activities (with  $DMI < 1$ ) except for processing (1.6) and consumption (1.6) of farm produce decision activities. Poor income, culturally gender-assigned responsibility, poor access to farm inputs, multiple domestic responsibility were ranked major constraints to women contribution to household farming decisions. In order to encourage greater participation of women in agricultural production and household farming decisions for increased food production and income, efforts should be made towards improving women access to farm inputs and credit facility. Literacy and sensitization programme on gender issues should be embark upon for the purpose of promoting shared responsibilities.*

© 2011 Elixir All rights reserved.

### Introduction

Gender issues are becoming increasingly indispensable in Nigeria's agriculture owing to overwhelming evidence of significant contribution of women to agriculture, household maintenance, stability and food security amidst formidable economic adversity (Umar *et al.*, 2007). Indeed, the greatest challenge to the agricultural production in Nigeria is how to ensure increased food production and value addition of agricultural products. The contribution of women farmers in meeting this challenge of agricultural development can not be overemphasized. Women make a significant contribution to the food production and processing of food stuff (Rahman *et al.*, 2004). They provide some 60-80% of agricultural labour and are responsible for 80% of food production (Ingawa, 1999; Mgbada, 2002; Rahman *et al.*, 2004). Food and Agricultural Organization (1998) observed that women produced between 60-80% of the food in most of sub-Saharan African Countries and are responsible for half of the world's food production. Women produce and process food and use diverse coping strategies for ensuring food security for their house holds (Rahman, 2009).

Farmers make decisions on a number of pre-harvest and post-harvest activities such as what to produce, input use, harvest and post-harvest issues, which according to William (2003) affect production, processing, distribution, prices and costs. Farming decisions are made to maximize farm objectives subject to available material and human resources. The available literature shows that men have continued to dominate farm decision making, despite the significant role played by women in agricultural production, processing and marketing in Nigeria even in areas where women are the largest providers of farm labour (Amaechina, 2002). Enete and Toofeeq (2010) observed

the following societal constraints militating against women's contributions to farm decisions: techno-institutional constraints such as lack of extension programme for women, insufficient knowledge of farm credit sources; socio-personal constraints such as misconceptions that women farmers do not have farming ideas, women are supposed to be subordinate to men in farming, low self confidence by women; and, economic/financial constraints such as low or lack of financial contributions to farming activities and access to credit support groups such as cooperatives.

Women's interest and involvement in farm decisions increase with an increased in the incomes (Rahman and Alamu, 2003). This has implications for access to productive resource like labour and involvement maize farming household decision. Women's participation in maize production can enhance their incomes and food security. Maize is a staple food for generality of the populace in the area. It is an important source of carbohydrates and contains appreciable quantity of protein, iron, vitamin B and minerals. It is consumed as a starchy-base in a wide variety of porridges, pastes, grits, etc. Green maize (fresh on the cob), eaten as roasted or boiled, plays an important role in filling the hunger gap after the dry season (International Institute of Tropical Agriculture, 2009).

According to Enete and Toofeeq (2010), previous efforts at estimating women's role in agriculture have tended towards evaluating their labour contributions with little farm-level information regarding their role in decision making, particularly in male dominated farming communities. Therefore the study examined labour contribution and decision making role among maize farming households. Specifically the study aimed at:

describing the socioeconomic characteristics of women in maize farming households; determining the gender-based labour contribution in maize production; estimating the level of involvement in the farm decision making among maize farming households; and, identifying constraints to women contribution to household farming decisions.

### Methodology

The study was conducted in Lafia Local Government Area of Nasarawa State, North-central Nigeria. It is located between latitude  $7^{\circ} - 9^{\circ}\text{N}$ , Longitude  $7^{\circ} - 9^{\circ}\text{E}$  and altitude 181.5m above sea level. The average annual rainfall is approximately 1,288mm and annual mean temperature ranges from  $22.7^{\circ}\text{C} - 36.8^{\circ}\text{C}$ . The soil texture is predominantly sandy-loam. Sorghum, cowpea, rice, maize, sesame, groundnut, cassava and yam are the main crops grown in the area. The area occupies the landmass of 2,737 square kilometer with a population of about 330,712 who are mostly farmers. It is made up of six (6) Districts which include; Akunza, Agyaragu Tofa, Lafia Central, Lafia East, Lafia North and Lafia West districts.

A multi-stage sampling technique was used to select target respondents. In the first stage, four districts were randomly selected from six districts that make up the local government area. In the second stage of sampling, three communities were randomly selected from each of the four districts. This amounted to 12 communities that were sampled for the study. Finally, five (5) maize farming households were purposively selected from each of the twelve (12) communities in the area. The reason for purposive selection is to ensure easy identification and selection of maize farming households. From each of the sixty (60) maize farming households' sampled, male and female members of the household were contacted as respondents for the study. Thus, sixty (60) females' and sixty (60) males' members of the maize farming households were used to generate data for the study.

Primary data were used and collected with the aid of structured questionnaire administered to both man and woman in each of the maize farming households. Data were collected on socio-economic characteristics of women farmers, the gender based labour contribution in maize production, level of respondents' involvement in the farm decision making and the constraints to women contribution to household farming decision.

Descriptive statistics (percentage, mean, coefficient of variation and standard deviation) and Decision Making Index (DMI) were used to analyze data for the study. Decision Making Index (DMI) was measured by 3-point scale such as decision taken by female alone (2), decision taken by male and female together (1) and decision taken by male alone (0) as used by Rahman *et al.*, (2008).

$$\text{DMI} = \frac{\text{M} \times 0 + \text{F} \times 2 + \text{B} \times 1}{\text{Number of respondents}}$$

Where

M= male member of household alone,

F = female member of household alone,

B= both male & female members of household.

DMI >1 implies greater involvement in the decision making process by female farmers.

DMI= 1 shows gender equality in the decision making.

DMI < 1 indicates greater involvement in the decision making process by male farmers.

### Results and Discussion

Socio-economic Characteristics of the Women in Maize Farming Household:

The socio-economic features of the women in the maize farming households in the study area were presented in Table 1. The women in maize farming households were between the ages of 15 and 50 years with the mean of 27 years. The result indicated stability in age bracket among the women as shown by the coefficient of variation (32.2 percent). This agrees with the findings of Adetunji *et al.*, (2007) that women within the above age bracket are economically active. The women' years of experience in maize farming were at a maximum of 40 years and minimum of 2 years with a mean of 14 years and 64.3% variability. On the average, women had three years of adult education. This showed that there was low level of education among women in maize farming household (Table 1). The highest period of participation in cooperative was 25 years with a mean of 1.6 years. This explained very wide variation from the mean as indicated by coefficient of variation (313%). This is an indication that majority of the women in the maize farming households had poor cooperative participation. The annual income among women in the maize farming households were at a minimum of ₦5,000 and maximum of ₦650,000 with mean of ₦54,933 (Table 1). With the wide variability of 160% (coefficient variation), it implies that the annual income level was generally low among women in the maize farming households. Table 1 also showed that the maximum amount of credit obtained in the area was ₦200,000 while the mean of credit obtained was ₦5,717. Therefore, the wide variability from the mean of more than 400% as shown by coefficient of variation is an indication that majority of women in maize farming households did not have access to the credit facility. This result agrees with Yisehak (2008) that women are rarely considered credit worthy because they have no collateral. The number of extension agents' contact with women farmers per annum was at the maximum of 5 with the mean of 0.4. This explained unstable nature of coefficient of variation (225%). Thus, the majority of women in maize farming households did not have access to the extension services in the area. This finding agrees with that of Tsado *et al.*, (2009).

Maize Farming Household Labour Contributions: On the average, the male members of the maize farming households contributed more labour of not less than 76% per-hectare especially on the pre-harvest farm operations like land clearing, ridging, planting, fertilizer application, first and second weeding. While their female counterparts contributed more labour (54% and above) on the post-harvest farm operations such as threshing and bagging (Table 2). For harvesting operation, men labour contribution was about 25% higher than that of women. On the average, male members of maize farming households contributed 74% of the total household labour needed for maize production per hectare in the study area. While labour contribution towards post-harvest farm operations by female counterparts was 16% higher. This finding disagrees with Ingawa (1999), Mgbada (2000) and Rahman *et al.*, (2004) that women provide about 60-80% of agricultural labour towards farm processing operations.

Level of Involvement in the Household Farming Decision Using DMI: Decision Making Index (DMI) is an important indicator for assessing women empowerment since DMI and women empowerment is positively related (Rahman *et al.*; 2008). Rahman (2009) observed that women as an important human resource in farm production, their productivity depends on the rate of involvement in farm decision-making. Table 3 showed that men dominate decision making process for activities like

selection of enterprise (0.35), input procurement (0.25), input allocation (0.18), selling of produce (0.42) and storing of produce (0.38), while women were more involved in making decision concerning processing (1.6) and consumption (1.6) of farm produce. This finding agrees with Rahman (2009) that men take more of the decisions or responsibilities with regard to selection of enterprises as well as buying and usage of farm inputs. The result also implies that decisions taken by women are related to the farm tasks they performed.

**Constraints to Household Farming Decisions:** The most highly ranked constraints to women contribution to the household farming decisions identified in the area were poor income, culturally gender-assigned responsibility, poor access to farm inputs, multiple domestic responsibility and household violence respectively (Table 4). Other constraints identified included poor access to credit facility and lack of extension service.

#### Conclusion and Recommendation

Male members of maize farming households contributed 74% of the total household labour needed for maize production per hectare in the study area. However, labour contribution towards post-harvest farm operations like threshing and bagging of maize grain by female farmers was 16% higher than their male counterparts. Male farmers also dominate decision making pertaining to selection of enterprise, input procurement, input allocation, selling of produce and storing of produce while female members of the maize farming households were more involved in making decision concerning processing and consumption of farm produce. Poor income, culturally gender-assigned responsibility, poor access to farm inputs, multiple domestic responsibility and household violence were major constraints to women contribution to maize farming household decision making in the area.

In order to encourage greater participation of women in agricultural production and household farming decisions for increased food production and income, the following recommendations need to be observed:

- i there should be an improved access to farm inputs and credit facility;
- ii training, sensitization and information activities on gender issues should be developed for the purpose of promoting shared responsibilities; and
- iii there should be enough investment in education and other literacy programme for girls and women.

#### References

Amaechina EC. Gender relations: paper presented at gender and good governance training workshop for community leaders from 2 communities in Abia State. World wide network/Erbert stiftung foundation: 12<sup>th</sup> – 15<sup>th</sup> June, 2002.

Adetunji MO, Olaniyi OA and Raufu MO. "Assessment of benefits derived by cocoa farmers from cocoa development unit activities of Oyo State". *Journal of Human Ecology*.2007:pp 22 (3): 211 – 214.

Enete AA and Toofeeg AA. Determinants of women's contribution to farming decisions in cocoa based agroforestry households of Ekiti State, Nigeria. 2010

:<http://factsreports.revues.org/Index396.html>. Accessed 26<sup>th</sup> Sept, 2010

Food and Agricultural Organization. Women and sustainable food security.1998:

[www.fao.org/WAICENT/FAOINFO/SUSTDEV/FSdirect](http://www.fao.org/WAICENT/FAOINFO/SUSTDEV/FSdirect).

Accessed 27/08/10

International Institute of Tropical Agriculture. Maize Project. 2009: [www.ita.org/cms/details/](http://www.ita.org/cms/details/). Accessed on 24/08/2010.

Ingawa SA. Welcome address at national workshop for women in agriculture, held in FACU HQRs, Sheda-Abuja, Nigeria. 31<sup>st</sup> August- 2<sup>nd</sup> September, 1999.

Mgbada JU. Production of staple crops by women farmers in Enugu and Ebonyi States. lesson for enhancing poverty alleviation in Nigeria. A proceeding of the 6<sup>th</sup> annual national conference of the agricultural extension society of Africa studies, University of Ibadan, Nigeria.2002: 13<sup>th</sup> – 16<sup>th</sup> Pp 10 – 12

Rahman SA and Alamu JF. Estimating the level of women's interest in agriculture: The application of Logit Regression Model. *Nigerian Journal of Scientific Research*. 2003: 4(1):45-49

Rahman SA, Gabriel J and Marcus ND (2004). Gender differentials in labour contribution and productivity in farm production in Kaduna State, Nigeria. *Journal of Family Development*. 2004: 1(2): 12-21

Rahman SA. Gender issues in food security. paper presented at the first biennial conference on human security in Africa at Center for security, Olusegun Obasanjo Presidential Library, Abeokuta, Ogun State, Nigeria. March 5<sup>th</sup>-8<sup>th</sup>, 2009.

Rahman MW, Ali RA and Hossain MM. Women involvement in livestock and poultry raising in some selected areas of Mymensingh District, Bangladesh. *Asia-pacific Journal of Rural Development*. 2008: Vol XVIII, No 2. pp119-132.

Tsado JA, Tologbose EB, Tologbonse JA, Alabi MO and Tergema A. An analysis of women's involvement in farming activities in doko district of Lavun Local Government Area of Niger State, Nigeria. *Production Agriculture and Technology*.2009: 5(2):pp 270-277

Umar AG, O moyana BO, Adedeji TA and Nwachukwu W. An overview of rural infrastructure in the presidential initiative on agriculture reform in Nigeria In: Alhansu, J.O; Y. Olubanjo, and S.O Akinyele (eds). A Proceeding of 21<sup>st</sup> Annual Conference of Farm Management Association of Nigeria. (FAMAN). pp21-24. 2007

William DM. Production Costs Critical to Farming Decisions.2003: [http:// www.ers.esda.gov/](http://www.ers.esda.gov/). Retrieved 15 / 08/ 2010.

Yisehak K. Gender Responsibility in Small Holder Mixed Crop Livestock Production System of Jimma Zone, South West Ethiopia. *Livestock Research for Rural Development*. 2008: <http://www.Irrd.Org/Irrd20/1/yise20011.htm>. Retrieved October 2009.

**Table 1: Socioeconomic Characteristics of Women in Maize Farming Households**

Variations	Maximum	Minimum	Mean	SD	CV (%)
Age (Yrs)	50	15	27	8.7	32.2
farming experience (yrs)	40	2	14	9	64.3
Educational status (yrs)	14	1	3	3.8	126.7
Coop. participation (yrs)	25	0	1.6	5	312.5
Annual income (₦)	650,000	5,000	54,933	87,632	159.5
Credit obtained (₦)	200,000	0	5,717	27,261	476.8
No. of extension contact per annum	5	0	0.4	0.9	225

Source: Field survey, 2010

**Table 2: The Average Maize Farming Household Labour Contributions Per hectare**

Farm Operation	Household Labour(mhr)	Percentage Contribution	
		Male	Female
Land clearing	70.1	91.6	8.4
Ridging	120	94	6
Planting	44.4	85	15
Fertilizer application	21	79*	11*
1 <sup>st</sup> weeding	185	92	8
2 <sup>nd</sup> weeding	133	81*	5*
Harvesting	136	57	43
Threshing	176	46	54
Bagging	44	45	55

Source: Field survey, 2010

\* = Not every farming household is involved in the fertilizer application and 2<sup>nd</sup> weeding operations.**Table 3: Decision Making Index in the Maize Farming Households**

DMA*	EMD*	EWD*		Both	DMI*
		(No)	(No)		
Selection of enterprises	39	0	21	0.35	
Input procurement	46	0	14	0.23	
Input allocation	49	0	11	0.18	
Selling of produce	40	05	15	0.42	
Storing of produce	41	04	15	0.38	
Processing of produce	10	46	06	1.6	
Consumption of produce	10	46	06	1.6	

Source: Field Survey, 2010

DMA\*: Decision Making Activities

EMD\*: Exclusively Men Decision

EWD\*: Exclusively Women Decision

DMI\*: Decision Making Index

**Table 4: Constraints to Women Contributions to the Household Farming Decisions**

Constraints	Frequency*	Rank
Poor income	54	1st
Poor access to farm inputs	35	3rd
Poor access to credit facility	17	6th
Lack of extension service	10	7th
Multiple domestic responsibility	26	4th
Household violence	19	5th
Poor access to cooperative society	9	8th
Culturally gender-assigned responsibility	53	2nd

Source: Field Survey, 2010

\* = Multiple responses were considered; hence the total frequency is more than the sample size.