

## GENDER ROLES IN SOYBEAN CULTIVATION IN CENTRAL BENUE STATE, NIGERIA

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### ABSTRACT

*The study examined gender roles in soybean cultivation in 12 communities in central Benue State, Nigeria, with the aim of providing an understanding of role differences for planning gender-sensitive programmes that seek to reduce poverty and malnutrition, and attain food security. Structured interview schedule was used in collecting data from one hundred and twenty (84 males and 36 females) soybean farmers randomly selected from the communities. Percentages and means were employed in data analysis while T-test was used to test significant difference between males and females in mean roles and constraints in soybean cultivation. The results showed that male farmers contributed more in heavy tasks of land clearing, land preparation, fertilizer application, harvesting and bagging/packaging while females were more engaged in light tasks like seed selection, sowing/planting, weeding and threshing. The study revealed that female farmers were responsible for almost all domestic activities (cooking, wood collection, water collection and child care). The results further showed that both gender perceived lack of improved production methods, lack of farmer participation in technology generation, inadequate training opportunity, poor extension agent-farmer contact, lack of access to labour-saving devices, high cost of labour, poor access to credit, poor access to inputs, and poor pricing of produce as serious constraints to soybean cultivation in the study area. The findings showed significant differences in roles and constraints of male and female farmers in soybean cultivation.*

**Keywords: Gender, roles, constraints, soybean cultivation**

### INTRODUCTION

In every society, men and women have differential and interdependent roles in the development process. Gender roles are roles that are played by both men and women and which are not determined by biological factors but by the socio-economic and cultural environment or situation (ICA-ILO, 2001; Mollé and Mtenga, 2000). Often, the biological differences between men and women are used to explain these different roles. Men's physical strength makes them more suited for harder jobs while women's qualities are supposed to make them suited for works that involve detail and patience.

However, Buckland and Haleegoah (1996) observed that roles for men and women could be quite different depending on the beliefs and traditions of a particular culture and not on biological differences. Similarly, Ityarvyar (2008) noted that the roles that men and women play in the society depend on social expectations rather than on biological differences between females and males.

Gender refers to the socially constructed differences and relations between males and females (Townsend, 1993). It focuses on the relationship between men and women, their roles, access to and control over resources,

division of labour and needs (Feldstein and Jiggins, 1994). Gender roles in agriculture are relational because they refer not to women and men in isolation, but to the relations between them and these relations are socially constructed. It is also hierarchical because the differences established between men and women far from being neutral, tend to attribute greater importance and value to the characteristics and activities associated with certain roles, producing unequal power relations between them (Ityarvyar, 2008). Gender differences in rural farming households vary widely across cultures in Nigeria, but certain features are common. Women tend to concentrate their agricultural activities around the homestead primarily because of their domestic and reproductive roles. They play a critical role in food production, post-harvest activities, livestock care and increasingly in cash cropping (Ityarvyar, 2008).

Analyzing gender roles and constraints in soybean production in Benue State is important because the state is the largest producer of soybean in Nigeria (Smith *et al.*, 1995; FMARD, 2006). It accounts for about 90% of the total national production (Avav, 2000). In addition, soybean plays an important role in household food security and nutrition and in improving soil fertility (Sanginga *et al.*, 1999). However, the different roles of women and men in agricultural production, including soybean production, frequently have been ignored in agricultural research and extension activities (Feldstein and Jiggins, 1994). Thus, understanding the differential roles and constraints of men and women in soybean cultivation is critical in planning programs that seek to reduce poverty and malnutrition, and attain food security in Benue State.

Consequently, the foregoing raises some pertinent questions such as: what roles do

men and women perform in soybean field operations? What household activities are carried out by men and women soybean farmers? What are the constraints of men and women in soybean cultivation? To answer these questions, this study analyzed gender roles and constraints in soybean cultivation in Benue State of Nigeria. The specific objectives were to identify the roles of men and women in soybean farm operations, ascertain the roles of men and women in household activities and to analyze constraints of men and women in soybean cultivation.

## METHODOLOGY

The study was conducted in Benue State, Nigeria. The State is located east of the Rivers Niger and Benue Confluence within the Middle Belt Region, which is the transition zone from the diverse southern and northern ecologies. The State lies between Longitude 6°35'E and 10°E and Latitude 6°30'N and 8°10'N. It has an estimated population of 4.22 million (FRN, 2007) and about 80% of this population is involved in subsistence farming, cultivating both arable and tree crops (Benue State Agricultural and Rural Development Authority, 2005).

Multi-stage sampling technique was used to select the sample size. The first stage involved the purposive selection of zone B out of the three agricultural zones in the state. Zone B was purposively selected for this study as it constitutes the zone where soybean is most extensively grown (Sanginga *et al.*, 1999). The second stage involved the selection of 3 local government areas (LGAs) from the 7 LGAs that constitute zone B through simple random sampling technique. The third stage was the purposive selection of 4 villages (where soybean is most extensively grown) from

each LGA making a total of 12 villages. The sampled villages included Luga, Andor, Kyado and Akpagher in Gboko LGA; Nege, Abwa, Buruku and Tywanye in Buruku LGA; and Aboho, Asukunya, Mbaikyo and Mbaigba in Tarka LGA. The fourth stage involved a simple random sample of 10 households from each of the selected villages. A total of 120 respondents (84 males and 36 females) were selected and the sample was stratified randomly to ensure gender representativeness. Structured interview schedule was employed in data collection.

A dummy variable was used to measure whether or not the respondents were involved in soybean farm operations and household activities. A “yes” answer was given the value of 1 and a “no” answer was assigned a value of 0.

The perceived constraints of men and women in soybean cultivation was measured on a 3-point Likert type scale with options of “not serious” (1) to “serious” (2) and to “very serious” (3). The mean value of 2.0 was used as cut-off point. Variables with mean scores equal to or greater than 2.0 were regarded as serious hindering factors while those with mean scores less than 2.0 were regarded as not serious.

Descriptive statistics such as percentages and mean scores were employed in data analysis. T-test was used to test significant difference between men and women in mean roles and constraints in soybean cultivation.

## RESULTS AND DISCUSSION

### Socio-economic characteristics of the respondents

The results in Table 1 show that 70% of the respondents were males while 30% were females. A large proportion of the male (59.5%) and female (58.3%) farmers were within the age range of 31-50 years with an average age of 44.9 and 39.5 years respectively. In addition, a greater percentage of the male (94%) and female (63.9%) respondents were married. The results also

revealed that majority of the male (81%) and female (58.3%) farmers were educated with mean educational level of 8.2 and 3.8 years respectively. This implies that more males had formal education than females. Furthermore, the results showed 39.3% of male respondents had household size of 7-10 people while 44.4% of females had 1-3 persons with mean household size of 14 and 8 persons respectively. These results revealed that male farmers had higher number of persons in the household relative to females. Findings also indicated that a greater proportion of male (42.8%) and female (55.6%) respondents had soybean farming experience of 11-20 years with the average of 17 and 12 years respectively. This implies that male farmers had longer years of soybean farming experience relative to females. Similarly, a greater proportion of male (66.7%) and female (88.9%) respondents cultivated 1-2 hectares of soybean with the average of 2.4 and 1.5 hectares respectively, showing that male farmers cultivated more hectares of soybean than females. The study also revealed that a great proportion of the respondents were involved in small-scale soybean production in the study area. Furthermore, results of the study showed 45.3% of the male respondents earned an annual soybean income of 50, 000-100, 000 naira while 80.6% of the females earned less than 50, 000 naira with respective annual average income of 72, 318 and 39, 561 naira. Although, females earned a substantial proportion of their income from soybean, which is traditionally male crop (Sanginga *et al.*, 1999), males earned a higher proportion of income relative to females. Consequently, low income from soybean production may be an obstacle to female farmers' adoption of soybean technology as lack of cash could make the purchase of desirable inputs unlikely (Feldstein and Poats, 1989).

**Table 1: Distribution of respondents according to socio-economic characteristics**

(n=120)

Category	Characteristic	Male		Female	
		%	Mean	%	Mean
Gender		70		30	
Age (years)	<30	11.9		25.0	
	31-50	59.5	<b>44.9</b>	58.3	<b>39.5</b>
	51 and over	-		16.7	
Marital status	Married	94.0		63.9	
	Single	6.0		2.8	
	Widowed	-		33.3	
Educational level	No formal Education	19.0		41.7	
	Primary	38.1		30.5	
	Secondary	31.0	<b>8.2</b>	19.5	<b>3.8</b>
	Tertiary	11.9		8.3	
Household size	3-6	11.9		44.4	
	7-10	39.3		38.9	
	11-14	15.5	<b>14</b>	13.9	<b>8</b>
	15 and over	33.3		2.8	
Soybean farming experience (years)	1-10	31.0		55.6	
	11-20	42.8		38.9	
	21-30	21.4	<b>17</b>	5.5	<b>12</b>
	31 and over	4.8		-	
Soybean farm size (ha)	1-2	66.7		88.9	
	3-4	28.5	<b>2.4</b>	11.1	<b>1.5</b>
	5-6	4.8		-	
	>6				
Annual soybean farm income (₦)	< 50,000	35.7		80.6	
	50,000-100,000	45.3	<b>72,318</b>	16.6	<b>39,561</b>
	>100,000	19.0		2.8	

Source: Field survey, 2008.

### Male and female roles in soybean farm operations

The results in Table 2 show that both male and female farmers participated in all soybean farm operations in the study area. However, males were more involved than females in five out of nine farm operations. These included land clearing (96.4%); land preparation (96.4%), fertilizer application (94%); harvesting (97.6%) and bagging/packaging (88.1%). Conversely, females recorded higher involvement than males in four out of nine farm operations thus: seed selection (72.2%); sowing/planting (91.7%); weeding (91.7%) and

threshing (86.1%). These results imply that while men were responsible for heavy tasks such as land clearing/preparation, fertilizer application, and bagging/packaging, women were more involved in light tasks like seed selection, sowing/planting, weeding and threshing. The results also revealed that gaps exist in gender involvement in soybean farm operations in the study area. This finding agrees with Sanginga *et al.* (1999) that the traditional gender division of agricultural activities in Tiv farm households is such that men are responsible for heavy tasks including land preparation while women take over the management of the farm after land preparation.

The results in Table 2 revealed significant statistical differences between the two genders in land clearing ( $t=-5.34$ ), land preparation ( $t=-5.03$ ), sowing/planting ( $t=-4.51$ ) and bagging/packaging ( $t=-2.46$ ).

Given the roles played by males and females in soybean production, it is important for research organizations to develop appropriate labour-saving devices to relieve the drudgery in soybean farming operations.

**Table 2: Perception of involvement in soybean farm operations by gender**

Operation	Male			Female			t-value	Remarks
	%	$\bar{X}$	SD	%	$\bar{X}$	SD		
Land clearing	96.4	0.96	0.19	50.0	0.50	0.51	-5.34	S
Land preparation	96.4	0.96	0.19	52.8	0.53	0.51	-5.03	S
Seed selection	57.1	0.57	0.50	72.2	0.72	0.45	1.62	NS
Sowing/planting	59.5	0.60	0.49	91.7	0.92	0.28	4.51	S
Weeding	82.1	0.82	0.39	91.7	0.92	0.28	1.52	NS
Fertilizer application	94.0	0.94	0.24	52.8	0.53	0.32	-0.87	NS
Harvesting	97.6	0.97	0.15	94.4	0.94	0.23	-0.75	NS
Threshing	83.3	0.83	0.37	86.1	0.86	0.35	0.39	NS
Bagging and packaging	88.1	0.88	0.33	66.7	0.67	0.48	-2.46	S

Source: Field survey, 2008.

= mean score; SD= standard deviation; S= significant; NS= not significant

### Male and female roles in household activities

Results in Table 3 reveal that both male and female soybean farmers were involved in all household tasks. However, females were more engaged in four out of six activities thus: food preparation (66.7%); wood collection (77.8%); water collection (80.6%); and child care (:94.4%). On the other hand, males contributed more in building repairs (97.6%) and livestock care (86.9%). The results showed that females were responsible for almost all domestic activities. This finding corroborates the assertion of IIRR (1998) that rural women carry out 90% of the domestic responsibilities in sub-Saharan Africa.

The results also indicate significant differences between males and females in five out of six household tasks thus: food preparation ( $t= 6.460$ ), wood collection ( $t= 4.355$ ); water collection ( $t = 5.584$ ), child care ( $t = 4.458$ ), and building repairs ( $t= -4.911$ ) (Table 3). The differences can be explained by the fact that farmers had earlier reported that females were almost entirely responsible for domestic activities in the study area. Given female's role in household activities, time and labour-saving technologies or support services in domestic activities can increase women's efficiency and time availability, with an overall positive impact on household livelihoods and productivity.

**Table 3: Perception of involvement in household activities by gender**

Activity	Male			Female			t-value	Remarks
	%	$\bar{X}$	SD	%	$\bar{X}$	SD		
Food preparation	10.7	0.11	0.12	66.7	0.67	0.48	6.46	S
Wood collection	39.3	0.40	0.39	77.8	0.80	0.42	4.36	S
Water collection	33.3	0.33	0.33	80.6	0.81	0.40	5.58	S
Child care	65.5	0.70	0.65	94.4	0.94	0.23	4.46	S
Building repairs	97.6	0.98	0.98	55.6	0.50	0.50	-4.91	S
Livestock care	86.9	0.87	0.89	77.8	0.78	0.42	-1.15	NS

**Source:** Field survey, 2008.

#### Gender related constraints in soybean cultivation

The results in Table 4 reveal the mean gender perception of constraints to soybean cultivation in the study area. Findings showed that both male and female respondents perceived nine out of fourteen constraints as serious. The mean scores for these serious constraints ranged between 2.13 and 2.67 for males and 2.03 and 2.53 for females on a 3-point scale. The serious constraints and their mean scores included lack of improved production methods (male:  $\bar{X}$  = 2.1; female:  $\bar{X}$  = 2.0); lack of farmer participation in technology generation (male:  $\bar{X}$  = 2.2; female:  $\bar{X}$  = 2.1); inadequate training opportunity (male:  $\bar{X}$  = 2.2; female:  $\bar{X}$  = 2.1); poor extension agent-farmer contact (male:  $\bar{X}$  = 2.4; female:  $\bar{X}$  = 2.3); lack of access to labour saving devices for farm operations (male:  $\bar{X}$  = 2.5; female:  $\bar{X}$  = 2.4); high cost of labour (male:  $\bar{X}$  = 2.3; female:  $\bar{X}$

= 2.1); poor access to credit (male:  $\bar{X}$  = 2.8; female:  $\bar{X}$  = 2.6); poor access to inputs (male:  $\bar{X}$  = 2.4; female:  $\bar{X}$  = 2.4); and poor pricing of produce (male:  $\bar{X}$  = 2.6; female:  $\bar{X}$  = 2.5). These factors are critical to increased soybean production and productivity by both male and female farmers. For instance, poor access to credit facilities resulting in low capital base may limit expansion of land put to cultivation.

The results in Table 4 further showed the differences in perception of constraints in soybean production between male and female farmers. These results revealed that significant statistical differences exist between the constraints of male and female farmers in respect of high cost of labour (t = 2.20) and poor access to credit (t = 2.93) for soybean cultivation. The implication of this finding is that gender responsive soybean interventions capable of surmounting the problems are urgently needed to address the needs of male and female farmers in the surveyed communities.

**Table 4: Perception of constraints in soybean cultivation by gender**

Constraint	Male $\bar{X}$	Male SD	Female $\bar{X}$	Female SD	t-value	Remarks
Ignorance of improved production methods	2.1	0.80	2.0	0.74	0.68	NS
Lack of farmer participation in Technology generation	2.2	0.86	2.1	0.77	0.60	NS
Inadequate training opportunities for farmers	2.2	0.74	2.1	0.68	0.71	NS
Poor extension agent-farmer contact	2.4	0.73	2.3	0.73	1.10	NS
Lack of access to labour saving devices for farm operations	2.5	0.61	2.4	0.77	0.60	NS
High cost of labour	2.3	0.66	2.1	0.58	2.20	S
Poor access to Credit	2.8	0.45	2.4	0.61	2.93	S

Table 4: Contd.

Constraint	Male $\bar{X}$ SD	Female $\bar{X}$ SD	t-value	Remarks
Poor access to farm inputs	2.4 0.69	2.4 0.77	-0.43	NS
Lack of knowledge and information on input use	1.9 0.71	1.8 0.56	0.20	NS
High cost of transportation	1.6 0.65	1.6 0.61	0.71	NS
Poor pricing of produce	2.6 0.59	2.5 0.65	0.35	NS
Poor storage facilities	1.9 0.66	1.6 0.80	1.64	NS
High incidence of pest and disease attack, especially striga	1.6 0.73	1.6 0.73	0.30	NS
Soil infertility	1.7 0.70	1.9 0.67	-01.5	NS

Source: Field survey, 2008.

= mean score; SD= standard deviation; S= significant; NS= not significant

## CONCLUSION AND RECOMMENDATIONS

This study showed that although both male and female farmers were involved in soybean farm operations and household tasks, males contributed more in heavy tasks such as land clearing, land preparation, fertilizer application, harvesting and bagging/packaging while females were more engaged in light tasks of seed selection, sowing/planting, weeding and threshing. However, females were responsible for almost all domestic activities (cooking, wood collection, water collection and child care). Furthermore, both gender perceived that there were some institutional and technical problems militating against soybean production in the area.

Given the roles of males and females in soybean cultivation, the fact that soybean is a cash crop, extension organizations should design and implement gender responsive soybean interventions to address the production needs of producers. Female soybean farmers' special credit needs should be taken care of by encouraging them to form groups in order to access credit facilities. In addition, the groups, companies and corporate organizations involved in soybean production should encourage the production and distribution of labour-saving devices for soybean farm operations and household activities to reduce the drudgery involved in such activities and provide time, particularly for the females to participate in other economic ventures.

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