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Differentials in the Cassava Seed System among Entrepreneurs in Southern Nigeria: A Gender Situation Analyses

Madu, T. U.[1], Okoye, B. C.[1], Ewuziem, J. E.[1] & Onyeka, T.[1]

[1] National Root Crops Research Institute, Umudike, Abia State, Nigeria

Correspondence: Madu Tessy, Planning, Monitoring and Evaluation (PM&E) Department, NRCRI, Umudike Abia State, Nigeria. Tel: 234-803-364-3484. E-mail: tessmadu@gmail.com

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Abstract

The study analysed gender differentials in the cassava seed system among entrepreneurs in southern Nigeria to proffer policies for growth and sustainable cassava seed systems. A multi-stage and purposive sampling technique was used to select respondents for the study. Village seed entrepreneurs (VSEs) and cassava farmers in the cassava seed network of the BASICS project in 4 States were sampled in the first stage. Data were collected with interview schedules for individual interviews and Focus Group Discussions (FGD). The results show that the different gender groups compliment each other in the roles they play. Among the most important drivers of seed demand include; big roots size/ yield (67.56%) and (60.97%) for the male and female cassava farmers respectively), among the male was income generation (17.14%) and yield good *gari* quality for the female (31.70%), followed by high starch content (17.14%) for male and female (22.85). The profitability analyses show that for every N1.00 spent in cassava seed production, about N0.92 (male) and N0.90 (female) were generated, while N1.50 (male) and N1.32 (female) were generated for root production. The seed flow system shows that both male and female cassava farmers receive seed from various channels but at varying levels. The results call for policy issues targeted at increasing cassava production by advocating for more involvement of the women in seed production and increased access to and control of finance. There is also need to mitigate important constraints militating against cassava seed production for increased participation and production of cassava seed.

Keywords: Cassava, gender roles, seed drivers, seed flow, profitability, constraints

1. Introduction

Nigeria is the largest producer of cassava with an annual estimated production of 60mt (FAO, 2020). Cassava (*Manihot esculenta* Crantz) is considered the most important tropical root crops providing food and income to over 30 million farmers, processors and traders (Apata, 2019). It is cultivated in almost all agro-ecological zones in Nigeria. However the production is very much characterized by small scale producers who use old and local varieties and traditional production technologies which largely accounts for low yield. Oyebanji et al. (2003) noted that these small-holders account for over 80% of cassava production in Nigeria. Over 90% of cassava produced in the country is consumed locally with less than 10% utilized for industrial purpose.

Earlier research in Cassava value chain most especially in Nigeria tried to identify some factors that may affect how and to what extent women and men are able to participate in, and to benefit from participation in cassava value chains. Most research concentrated efforts at production, processing, marketing value chain and gender in the value chain (Teeken et al., 2018; Ahmadu and Idisi, 2014; Awotide et al., 2015; Anderson et al., 2016; Sewando et al., 2011; IFAD, 1994).

The important role of seed systems can hardly be overestimated, because seed is key to food security being the first link in the food value chain. Seed systems are governed by both formal and informal rules that impact on the level of influence and participation for both men and women and their ability to benefit from the system (Galie, 2013). There is dearth of knowledge on gender gaps that may exist in the cassava seed systems, preferred traits and effects on producers and processors in the value chain, constraints in cassava seed production and the profitability of cassava seed production. In view of this gap, this study targeted preferred producers and processors in cassava seed value chain. The outcome of this research will bring to light the traits that are preferred by both

men and women, and invariably facilitate demand for certified cassava seed by farmers. This is expected to increase the rate of adoption in the cultivation of improved and clean seeds, increased productivity and improved standard of living of the actors with a positive effect on socio-economic activities and create a platform for equity and equality in the cassava seed value chain.

To achieve a sustainable cassava seed revolution in Nigeria, not only is it necessary to identify the appropriate technologies and institutions needed to increase productivity and access to clean and certified seeds, but it is critical to understand the social systems supporting cassava seed production to position interventions that enhance economic and development goals at household and national levels. Specifically, there is need to understand the roles and responsibilities of women and men in production and marketing of the crop and in making decisions about resource allocation, consumption and marketing. Very little documentation exists on gender issues in commercial cassava seed production and agricultural projects in the country ignore gender dimensions. For development problems, several socio-economic factors play a contributing role.

Gender analysis will help for a better understanding of the needs and priorities of different people, both men and women, by clarifying how gender intersects with class, age, religion, ethnicity and other social factors. Gender situation will help predict which producers are likely to benefit from the introduction of a new project such as BASICS, especially when market demand increases which is likely to lead to large-scale, more intensive production systems. Such analysis can identify interventions to ensure that women, who tend to be disadvantaged by socioeconomic and cultural factors, are not marginalized or displaced by increased commercialized of cassava seed system.

2. Methodology

The study was conducted in Southern Nigeria (Fig. 1) and adopted a multi-stage sampling technique to select the respondents. In the first stage, four states were purposively selected for the study. The selection was based on the already established presence of village seed entrepreneurs (VSEs) in the cassava seed network of the BASICS project in the states. These states include: Abia, Imo (South East), Akwa Ibom and Cross River (South South). Secondly, two agricultural zones were selected from each state based on the distribution of the VSEs. Further selection was anchored around an active VSE in the communities where they exist. To achieve this, one community was selected in each of the 8 agricultural zones. At the community level, about 21 to 31 cassava farmers of different categories in terms of gender, farming capacity and position in the community participated in the study. Data were collected with interview schedules for individual interviews and Focus Group Discussions (FGD). In each community, cassava farmers (males and females) were interviewed and 2 FGDs conducted for male and female groups each. Table 1 describes the study locations and number of farmers interviewed. The research team, consisting of a gender specialist, three agricultural economists working with local interpreters' only in Akwa Ibom and Cross River States. Fieldwork was conducted between November 2018 and Dec 2018.

The cost-return analyses of seed production among the male and female cassava farmers in the study area was analysed with Net income analysis thus;

$NI = TR - TC$

Where;

NI = Net income

TR = Total returns

TC = Total cost

$TC = TVC + TFC$

TVC= Total Variable Cost

TFC= Total fixed Cost

A 5 point likert rating scale was used to measure the level of constraints militating against cassava seed production in the study area using strongly agree (5), agree (4), undecided (3) disagree (2) and strongly disagree (1). Respondents with mean score of 3.00 and above imply the constraints were important while respondents with mean score of less than 3.0 are not important. To determine the mean likert level = $Xs = \Sigma X$. Xs of each item was computed by multiplying the frequency of each response pattern with its appropriate nominal value and dividing the sum with the number of respondent to the items. This can be summarized with equation below.

$Xs = \Sigma fn/N$

Where, Xs =mean score, Σ = summation, f= frequency, n = likert nominal value, N= number of the respondents

Xs=1+2+3+4+5/5= 15/5 =3.00

Group interviews were carried out with a total of 32 women and 32 men and with 39 male and 51 female key informants. Information was elicited from farmers gathered on a range of items summarized in Table 2.

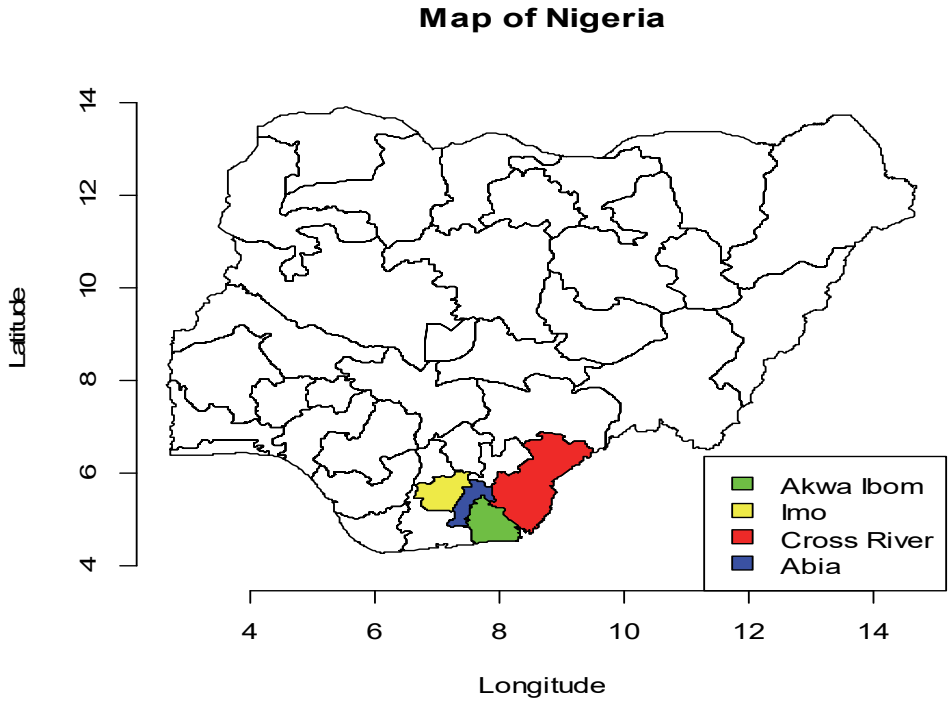

Figure 1. Map of Nigeria showing the Southern Region where study was conducted

Table 1. Description of study locations and gender composition of groups interviewed

Location	L.G.A	ADP Zone	Agro Ecological Zone	Gender Composition (Individual)			Gender Composition (Focus Grp)		
Abia				Male	Female	Total	Male	Female	Total
Ubakala	Umuahia South	Umuahia	Rainforest	4	6	13	9	9	18
Ahaba Imenyi	Isuikwuato	Ohafia	Rainforest	4	4	12	7	7	14
Imo									
Ihiagwa	Owerri West	Owerri	Rainforest	4	7	12	7	8	15
Awomamma	Oru East	Orlu	Rainforest	4	8	13	7	8	15
Akwa Ibom									
Uyo	Uyo	Uyo	Rainforest	4	5	7	7	7	14
Ikono	Ikono	Ikot Ekpene	Rainforest	5	6	9	7	8	15
Cross River									
Yakuur	Yakuur	Ugep	Rainforest	5	8	12	9	8	17
Biase	Akpe Central	Ikom	Rainforest	5	6	12	8	8	16

3. Results

3.1 Socio-Economic Characteristics of the Respondents

The results in Table 2 show the average statistics of the respondents in the study area. The results show that many (55.56%) of the respondents were females while 54.54% were males. This result implies that men and women were both involved in cassava production in the study area, although the females were slightly more involved than men. This agrees with the findings of Esiobu et al. (2014) who noted that agribusiness especially in sub-Saharan Africa is turning out to be more of a female activity. The implication of females 'greater proportion may be that technical efficiency and productivity is expected to be higher because females have the tendency to be more labour efficient (Ohen et al., 2014 and Onumadu et al., 2014).

Majority of the farmers were still in their productive years, although the males (48yrs) were older than their female (43.4yrs) counterparts. The implication is that these younger farmers are likely to adopt new innovation faster than the older ones in cassava production. This finding is in agreement with Moyib et al. (2013); Girei et al. (2014); Ohen et al. (2014) and Onumadu et al (2014) that majority of farmers within the age range of 41 to 50 years are still in their active age, more receptive to innovation more technically efficient, effective and could with stand the stress and strain involved in cassava production.

Majority of the farmers had long years of farming experience with an average of 17.32 (male) and 18.28 (female) years. Experience in agribusiness enhances output performance (Onyeneke and Iruo, 2011 and Onubuogu and Onyeneke, 2012). This finding follows Nweke et al. (2004); Ogundari and Brümmer (2010); Onubuogu and Onyeneke (2012); Amos (2013) and Onubuogu (2013) who reported that farmers' with more experience would be more efficient, have better knowledge of climatic conditions, better knowledge of efficient allocation of resources and market situation and are thus, expected to run a more efficient and profitable enterprise. It also supports the findings of Onubuogu et al. (2013) and Esiobu et al. (2014) who noted that previous experience in agribusiness management enables farmers to set realistic time and cost targets, allocate, combine and utilize resources efficiently and identify production constraints.

Majority were married, native of their communities with large household sizes. This shows that cassava production in the area is an enterprise of married individuals, who are seen to be responsible according to societal standards (Ewaonicha, 2005; Ohen et al., 2014 and Onumadu et al., 2014). This finding follows the result of Udoh (2005); Oluwatayo et al. (2008); Onubuogu and Onyeneke (2012) and Onubuogu et al. (2013) that married farmers tend to have access to production variables such as land and large family size which are traditionally owned and provided by household heads (husbands) to compliment family labour. These enhance production; reduce the cost of hired labour and resource use efficiency of the farmers. Results also show that majority do not have access to credit, although the males (22.50%) had more access credit than their female (14.00%) counterparts. Large household size ensures availability of labour and expansion of farm size (Mbanasor and Kalu, 2008; Ninso, 2012 and Nurudeen, 2012). This finding supports the result of Ewaonicha, (2005); Onubuogu and Onyeneke (2012) and Onubuogu et al., (2013) and Esiobu et al. (2014) who noted that large household size compliment labour, enhance production and reduce the cost of hired labour. Traders were mostly native from the region where they trade. However, family or tribal links between seller and buyer are important. In terms of native of community, the seller seems to go to his own region since he has an advantage of knowing the language, the geography, and the agricultural systems of the area (Minten and Kyle, 1999).

Many of the farmers do not belong to cooperatives while majority had access to communication facilities. Membership of cooperative societies affords farmers the opportunity of accessing information on modern production techniques, purchase of inputs in bulk and labour exchange (Ewaonicha, 2005; Onubuogu and Onyeneke, 2012; Simonyan et al., 2012 and Onubuogu et al., 2013). Results show that more males (66.67%) had personal means of transportation compared to their female (28.57%) counterparts. Deplorable road conditions also subsist in the study area with an average of 15.91% for road conditions that are good. The average cost of transportation from house to the farm was aboutN480.45 with distance from the farm to the market and house to the farm at 4.9km each. This might also partly explain the longer travel and assembly time during the wet season. It also illustrates the von Thunen hypothesis. The more perishable and the higher value the products the less distance they are transported (Minten and Kyle, 1999). However, the main reason for the longer time was probably the fact that roads were worse and often impassable in the rainy season. The farmers had little or no extension contacts annually with an average of one contact for males (1.15) and less than one for females (0.48). The female farmers had more annual farm income and non-farm income and expended less than their male counterparts monthly. The average distance to source of information was 3.85km.

Table 2. Average Statistics of the respondents

S/no	Variable	Male	Female	Pooled
1	Gender (%)	54.54	55.56	100.00
2	Age (yrs)	48.00	43.40	45.44
3	Farming experience (yrs)	17.32	18.28	17.85
4	Native of Community (%)	82.50	84.00	83.33
5	Marital Status (%Married)	87.50	66.00	75.56
6	Household size	7.02	6.60	6.79
7	Access to Credit (%)	22.50	14.00	16.00
8	Membership of cooperatives (%)	50.00	31.00	56.82
9	Access to communication facilities (%)	100.00	91.84	84.00
10	Have personal means of transportation (%)	66.67	28.57	45.45
11	Road condition is good	10.26	20.41	15.91
12	Average cost of transportation from house to farm (N)	432.80	518.26	480.45
13	Distance from farm to market (km)	4.71	5.13	4.94
14	Distance from house to farm (km)	3.94	5.72	4.93
15	Number of extension contacts in a year	1.15	0.48	0.78
16	Annual farm income (N)	418,948.70	535,714.30	483,965.90
17	Annual non-farm income (N)	193,871.8	199,551.00	197,034.10
18	Monthly expenditure on food	47,000.00	32,836.73	39,113.01
19	Distance to source of information (km)	4.05	3.69	3.85

Field Survey, 2018.

3.2 Gender Roles in cassava production in southern Nigeria

Recent events in cassava production revealed that all gender groups play important roles in the production of both the stems and roots of cassava. Results from this study indicated that men, women and the youths are involved in the production of cassava. The level and method of involvement depends largely on interest and commitment of individuals. Some are involved because they own the farm or are related to the owner. In other scenarios, some are involved because they were hired for a pay or exchange labour or that the type of work to be done also determines who gets involved. In what ever conditon of involvement, all the activities are important. Table 4 show the roles each gender group performs. The results presented in Table 3, show that the different gender groups compliment each other in the roles they play.

Table 3. Gender roles in cassava production

Activity	Men	Women	Children	Male Youth	Female Youth	HML	HFL
Site Selection	87.06	12.94					
Land Clearing	36.92	1.54	1.54	12.31		47.69	12.96
Gathering	66.67	92.59	35.18	14.81	18.51	7.41	29.85
Planting	36.00	83.58	40.29	16.42	13.43	19.40	59.65
Weeding	29.82	80.70	10.53	7.02	10.52	31.57	
Harbicide application	40.42	8.51		6.38	2.13	42.55	22.08
Harvesting	72.73	85.71	42.85	16.88	20.78	20.78	
Movement of Roots to House	26.92	21.15	3.85		5.77	42.30	
Movement of Roots to market	15.94	60.86		1.45		21.74	
Prepare food and buy water	7.22	89.69			1.03	2.06	
Selling at the farm Gate	18.29	79.27			1.22	1.22	
Sale at the market	9.75	87.80			1.22	1.22	
Who Holds money from sales	26.58	70.89		1.27	1.27		
Acces to money from sales	32.28	67.18					
Control of money from sales	36.36	61.64					
Access to Inputs	35.85	62.26	1.89				
Control of Inputs	50.82	49.18					
Acces to Credit	44.83	55.17					
Control of finance	61.97	52.11					

Field Survey, 2018.

The results show that men select the sites for cassava production in the study area. The men select over 87% of the lands used in cassava production while the women contribute only 13%. This might be because in most parts of southern Nigeria, men are the traditonal custodians of lands, therefore they know the area that will be used for farming during each cropping season. In some cases, men share communial lands to women for farming. However, in female headed households, women decides only after the men declare the location of farming for the season, although, in communities where people are free to farm wherever they chose, women who are heading households may decide the site for cassava farming.

For land clearing activity, the men, their male youth and the hired male youths do the bulk of the work. They perform over 85% of the land claring activity in the study area. Land clearing requires strength so women are not disposed to performing such duties and so rely on their husbands, male youth and in cases where they have to hire labour, they go for the energetic youths who will do work worth the pay. Women can only clear farm lands if they could not find a man or male youth to do the work . Gathering of wood in the cassava farm is done mainly by women, but men also assist; especially in communities where the fallow period is longer, up to 5 years. The woods will require additional effort such that men will be involved in gathering, although this activity is not generally considered important, it makes other farm activities easier.

Planting is a major activity in cassava farming. Results show that all the gender groups are involved in planting cassava but women play a dominant role. Women involvement in planting is more critical when the traditional methods of planting (planting on flat) cassava is practiced. Planting on ridges is easier, therefore, men will likely be involved in planting. Manual weeding is another activity that is mostly performed by women. This activity is a major constraint to women participation in farming generally. For large scale cassava farm owners (over 1ha), weeding is a major constraint to women. Weeding is however complimented with herbicide application which is usually done by male youths. Over 83% of this activity is performed by men, but women fetch water that is used in the operation. This activity requires some level of physical ability to perform because the knapsack tank has to be carried at the back of the operator. Women may not find this activity an easy task to perform, they therefore rely on the men and male youths.

Harvesting appear to be an activity that is performed by all the gender groups. Men, women and youths are involved in harvesting cassava either for sale or home consumption. This might be because money or food will come after this activiy. Movement of cassava; either to the home or market is performed by men, women and youth, with women dominating in this activity. A critical look at the result shows that men are more interested in havesting if it is for the market, because it is profitable. Movements of cassava at any point is done principally by women, although they get assistance from both men and youths. Most times if the women may require assistance to move either stems or root to the home or market, such assistance usually come from hired male youth especially if the distance is far.

Traditionally, women prepare food for the household, and for the farm workers either hired or members of her family. In recent times, preparing food for farm workers is recognized as an integral activity in studies of gender roles in crop production, even though some men argue against it. But food is always a necessary condition for accepting to do work, and without food, labour productivity is negatively affected. Therefore, time and energy used in cooking food could as well be compared to time used in doing farm work. It is therefore justified that preparing food for workers be counted as a role. Women also dominate all forms of selling of root and stems. They take charge of sales both at the farm gate and market with men playing compimentary roles in both cases. Men are rarely seen in the market selling root or stems. The situation is the same when it comes to holding money from sales, access and control of such monies, access to inputs and credit. This may appear different from gender study reports for a crop like yam where men restrict women's access to money from sales, and credit etc. This shows that in the study area, cassava is percieved to be a woman's crop and that is why men allow them access and control of money, input and other resources. However, for access to credit and finance, men came up stronger to share access and control with women probably because they are heads of households.

3.3 Drivers of Cassava Seed Use among Smallholder Farmers in Southern Nigeria

The results in Table 4 show the drivers of cassava seed use in the study area. The study elicited 12 variables mentioned by the cassava farmers as what drives their use of cassava seed. The most important variable stated by cassava farmers were big roots size/ yield (67.56%) and (60.97%) of male and female cassava farmers respectively). The 2nd most important driver for cassava seed use among the males was income generation (17.14%) and yield good *gari* quality for the females (31.70%), followed by high starch content (17.14%) for males and females (22.85) which ranked 3rd. Results also show that yield good *gari* quality ranked 4th for the females (14.20%) and early maturity and high fufu yield (12.19% each) for the females. For the male respondents, early maturity (11.42%)

ranked 5th and for stem yield (10.81%) among the males. Numerous roots ranked 6th for the males (9.75%) and was of no importance to the females while stem yield also ranked 6th for the males (10.81%). High *fufu* yield was the 7th most important driver for males (8.57%) and Nutritious value of vitamin A for the females. Among the drivers of cassava seed use of least importance include; stay green ability for the males (2.44%) and females (2.85%), in ground storability (0% for males and 2.85% for females), and good canopy formation for males (2.85%). The low percentage value for in ground storability might be because the respondents were mainly entrepreneurs who are market oriented. Teeken et al. (2021) identified the key traits that farmer–processors used to evaluate *gari* quality: darkening/browning, swelling power, bulk density, solubility, dispersibility and water absorption capacity. Higher water absorption capacity was identified as non-preferred for *gari* to make *eba*. Ndjouenkeu et al. (2020) noted that choice of cassava varieties for farming is mainly determined by the multiple end uses of the roots, their agricultural yield and the processing determinants of roots that support their major high-quality characteristics: size, density, low water content, maturity, colour and safety.

These results reinforce the importance of recognizing social difference and the heterogeneity among men and women, and how individual and household characteristics interact to reveal trait preference variability. This information can inform trait prioritization and guide development of breeding products that have higher social impact, which may ultimately serve the more vulnerable and align with development goals (Teeken, et al., 2021).

Table 4. Description of Drivers of cassava seed use among farmers in the study area

S/No	Descriptors	Male %	Female %
1.	Big Root yield size	67.56	60.97
2.	Nutritious Value Vit A	7.3	8.57
3.	Stem yield	7.32	10.81
4.	Stay green	2.44	2.85
5.	Yield good *gari* quality	14.20	31.70
6.	Income generation	17.14	2.43
7.	Early maturity	11.42	12.19
8.	Good canopy formation	2.85	7.31
9.	High *fufu* yield	8.57	12.19
10.	High starch content	17.07	22.85
11.	In ground storability	0	2.85
12.	Numerous Roots	9.75	0.0

Field Survey, 2018.

3.4 Costs and Returns Analyses of Cassava Seed Production in the Study Area

The results in the Table 5 show the profitability analyses of cassava seed production among the male and female farmers in the study area. The results show a revenue of about N180,185 and N226,378 generated from cassava seed for the male and female farmers respectively. This represents about 38.27% and 40.67% of total revenue from roots and seed for the male and female farmers respectively.

Table 5. Profitability analyses of Cassava Seed production per ha

Variable	Male	Female
Revenue	Value (N)	Value(N)
Roots (a)	290,621	330,211
Seeds (b)	180,185	226,378
Total Revenue (a+b)	470806.1	556589
Total Variable Costs (TVC)	180,846	240,591
Total Fixed Costs (TFC)	13,001.42	9,812.10
Total Costs (TC)	193,847	250403
Gross Margin (TR-TVC)	289,960	315,998
Net Profit (TR-TC)	276,959	306186
%contribution to profit by revenue from seed	38.271594	40.6724
BCR (for total revenue)	N2.43:N1.00	N2.22:N1.00
BCR (for seed production)	N0.92:N1.00	N0.90:N1.00
BCR (for root production)	N1.50:N1.00	N1.32:N1.00

Field Survey, 2018.

The results also show a total cost outlay of N193, 847 for the male and N250, 403 for the female farmers with a gross margin of N289, 960 and N315, 998 respectively. The estimated total net profit was N276, 959 and N306, 186 for the male and female farmers respectively, indicating that the enterprise was profitable. Results also show that with seed production, the total cost of cassava production can be defrayed with a benefit cost ratio of N0.92 (male) and 0.90 (female). This implies that for every N1.00 spent in cassava seed production, about N0.92 (male) and N0.90 (female) were generated, while N1.50 (male) and N1.32 (female) were generated for root production.

3.5 Cassava Seed Flow in the Study Area

The results in Figure 2 show the cassava seed flow among the farmers in the study area.

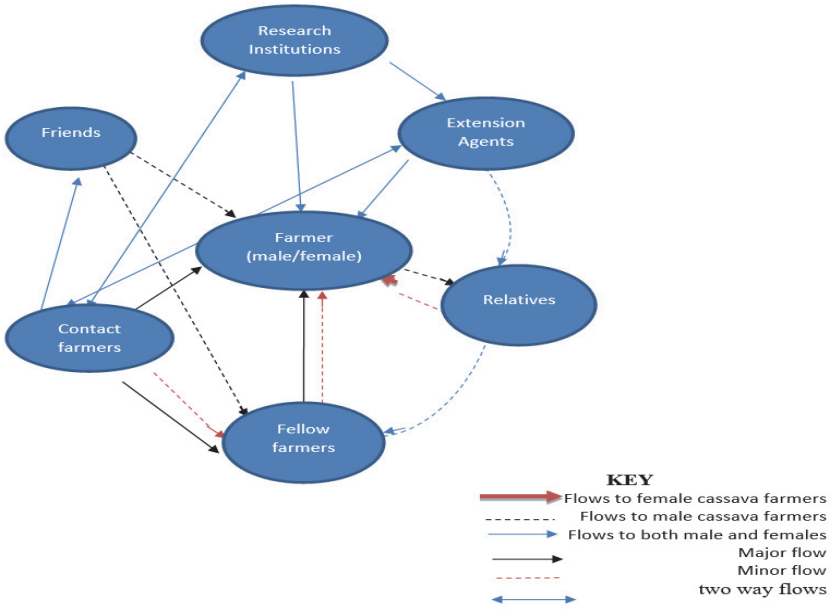

Figure 2. Cassava Seed Flow

The diagram (Figure 2) depicts that the major flows of seed to both male and female cassava farmers, contact agents and extension agents (where they are operational) were from the research institutions. There are two way flows between research institutions and contact farmers as well as between extension agents and contact farmers. In these scenarios, the volume of flows for both males and females are the same. However, males and female farmer get major flows from extension agents. In the other scenarios, minor flows exist between friends and relatives for male cassava farmers in the study area while the females receive minor flows from their fellow farmers and relatives. The implication of this result is that both male and female cassava farmers receive seed from organized seed agents at the same levels but the unorganized seed agents like friends, relatives and some fellow farmers, the distribution volume varies between males and females.

3.6 Constraints Militating Against Cassava Seed Production in the Study Area

The study identified various constraints militating against the production of cassava seed among farmers in the study area (Table 6).

Table 6. Constraints Militating against Cassava Seed Production in the study area

S/no	Constraints	Male	Female
1	Drought	2.47	2.69
2	Flood	2.41	2.55
3	Wind/storm	2.48	2.52
4	Disease/pest	3.07	3.22
5	Theft of produce	2.90	2.84
6	Bush fire	2.95	3.28
7	Communal/religious conflicts, etc.	2.14	3.04
8	Invasion of farms by cows/grazing animals	3.14	3.28
9	Producer price fluctuation	3.17	2.8
10	Insufficient supply of Cassava cuttings and other inputs	3.12	2.26
11	Poor soils	3.27	3.16
12	Lack of spraying equipment	3.83	2.6
13	Lack of or inadequate supply of chemicals	2.84	2.75
14	Lack of or inadequate fertilizer supply	2.60	2.82
15	Scarce labour	2.65	3.14
16	Insufficient credit facilities	3.31	3.04
17	Insufficient processing facilities	2.65	2.62
18	Unstable Government policy	2.80	2.94
19	Cost of technology	2.5	2.76
20	Access to credit	3.07	2.54
21	Access to Land	3.24	3.21
22	Cultural inhibitions	2.97	2.88
23	Disagreements	2.78	3.23
24	High cost of labour	3.78	3.63
25	Others (Specify)	3.36	3.90

Field Survey, 2018.

A five point likert scale rating of strongly agree, agree, undecided, disagree and strongly disagree was used. The table revealed that all these constraints were important constraints that militate against cassava seed production by both gender groups which includes; high cost of labour with mean of 3.78 for male and 3.63 for female respondents. Access to land had mean of 3.24 for male and 3.21 for female, insufficient credit facilities with mean of 3.31 for male and 3.04 for females and poor soils (3.27 for male and 3.16 for female respondents). All these constraints identified were seen as important constraints to both gender groups but were more important to the male group in contrast to their female counterparts. High cost of labour is usually identified as a major problem in cassava production because during the farming season, most labourers are usually busy with some other people's farm work, making it difficult to get labour, the available labourers therefore will increase their wage rate. Both male and female respondents considered insufficient credit facilities as a major constraint. This might be because credit is important to enhance access to inputs and marketing costs like stallage fees and transportation. Also, most farmers are poor; they cannot secure the necessary collateral for loans or access credit facilities. This result is in

agreement with the findings of Ojo et al. (2013) and Itam et al. (2018) who reported high labour cost and insufficient credit facilities as major constraints to cassava production. Invasion of farms by cows/grazing animals constituted with a mean of 3.14 for male and 3.28 for female respondents; diseases/pests had mean of 3.07 for male and 3.22 for female respondents. These constraints are also seen as important constraints to both gender groups but are more important to the female group. This result conforms to the findings of Akinnagbe (2010) who reported high incidence of pest and diseases, poor soil and credit facilities as major constraints militating against cassava production. Invasion of farms by cows or grazing animals is a major constraints that affects both gender groups because the activities of Fulani herdsmen and their cattle is very destructive, if they invade a farm, they will eat up the plants, roots and nothing will be left for the farmer and his family.

Furthermore, majority of the respondents, (3.83), (3.17), (3.12) and (3.07) indicated lack of spraying equipment, produce price fluctuation, insufficient supply of cassava cuttings/inputs and access to credit respectively as important constraints militating against male cassava farmers. Farmers still rely on the use of crude implements like hoes, cutlass, rake, shovel etc for their activities instead of ploughs, cultivators and knapsack sprayers, etc. and this leads to drudgery of farm work, time wasting, low yield and low farm income. Improved cassava cuttings were not readily available and the price of their produce often fluctuates. This result agrees with the findings of Ezeibe et al. (2015) who reported that lack of improved planting materials, and crude implements also affected both gender groups in cassava production. The women groups do not see it as important constraint, their mean is below 3.0. Majority of the female respondents (3.28), (3.23), (3.14) and (3.04) indicated bush fire, disagreement, scarce labour and communal/religious conflict respectively as important constraints militating against female farmers' participation in cassava seed production. Women experience scarcity of labour as constraint because of rural-urban migration of able bodied youths in search of white-collar jobs and other menial jobs creating labour shortage, especially at the peak period when labour is required for farming activities like land preparation, planting, weeding, harvesting etc. Also, hired labour shortage has driven up the cost of labour making production unprofitable to the farmers. The women are faced with the challenges of doing most of the labour themselves. Communal conflict is another constraint that militates against cassava production among women farmers, because often times, if two neighboring communities are at war, women and children are mostly affected because they are weaker groups and may not be able to fight for their inherited lands, their lands most times are forcefully taken away from them and they are displaced from their farmland. This result is in agreement with the study of Lamidi, (2005) who noted that conflict within the country also may be part of the constraint militating against cassava production. The male group does not see these constraints as important ones because their means were not up to 3.0.

4. Conclusion

Women are generally more involved and committed in cassava production. This makes them more willing and interested in cassava production in the study area. Among the most important drivers of seed use were big root size/yield, income generation, yield good *gari* quality and high starch content. Seed production also had the ability to pay for the total cost of production incurred in the cassava production enterprise. The farmers were at the break-even stage with seed revenue. The disaggregation of the sample into gender groups emerged different factors indicating that the decision to use cassava seed by male and female farmers are influenced by different set of factors. The study has confirmed the value of gender disaggregated analysis as a method of gaining more insight into cassava seed use in the study area. The results therefore call for policies aimed at bridging gender gaps in cassava seed production in the study area. In order to address these gaps, male and female cassava farmers in the study area should be allowed unrestricted access to productive resources as a way of exploiting their potentials in cassava production through the establishment of gender based cassava development programmes. Policy issues targeted at increasing cassava production should advocate for more involvement of the women in seed production and increased access to and control of finance. There is also need to mitigate important constraints militating against cassava seed production such as high cost of labour, diseases and pests and invasion of farms by grazing animals for increased participation and production of cassava seed.

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