SMALLHOLDER CASSAVA FARMERS' PARTICIPATION IN CONTRACT FARMING IN KOGI STATE, NIGERIA: GENDER PERSPECTIVES

BY

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ABSTRACT

This study is on gender perspectives of smallholder cassava farmers' participation in contract farming in Kogi State, Nigeria. The specific objectives are to: describe the socioeconomic characteristics of cassava contract farmers in the study area; identify the sources of information on contract farming by farmers and assess the difference in gender participation in the production activities of cassava contract farming in the study area. Primary data obtained through questionnaire administration were analysed using descriptive statistics. The result showed that 65.83% of the cassava contract farmers were males while the remaining 34.17% were females. The mean age was 37.21 years with a standard deviation of 7.68 years. Also, 99.4% of the respondents had access to extension services while only 0.56% did not have access to agricultural extension services. The various source of information on contract farming among the respondents were ADP (72.78%), cassava farmers association (72.22%), and friends (65%). The majority (78.05%) of the female contract farmers were involved in stem picking and bundling, while 89.45% of the male contract farmers were involved in agrochemical application. To increase women's participation and benefit from contract farming, contracting industries should take intra-household relations into account. Also, government and development partners should work together with agribusiness companies to guarantee that membership criteria offer equal opportunities to everyone interested in contract farming.

Keywords: Agricultural Development Project, Agrochemical, Contract farming, Gender, Participation

INTRODUCTION

Nigerian agriculture is known to be dominated by small scale farmers who produce the bulk of food requirements in the country (Food and Agriculture Organization, FAO, 2017; Nnadozie, 2015). Cassava is of high importance to the people of Nigeria because of its potential contribution to the total food intake of the populace. More than 291 million tons of cassava were produced worldwide in 2017, of which Africa accounted for over 60%. In 2017, Nigeria produced 59 million tons making it the world's largest producer (approximately 20% of global production) with a 37% increase in the last decade (Adofu and Ocheja, 2013).

Contract farming is the generic term that covers various types of contract between companies and farmers. Agricultural production is carried out according to a prior agreement in which the farmer commits to producing a given product in a given manner and the buyer commits to purchasing it (Lee and Kim, 2020). Contractual arrangements may be verbal or written and vary widely, depending on the countries, crops and companies concerned. Schemes usually entail a range of activities (services) that secure access to produce as in-kind input supply or on credit, extension services, transport for produce, and credit guarantees. The vast majority of contract farming projects are out-grower schemes and the terms have become synonymous. Contracting in agriculture is not, of course, limited exclusively to agreements between farmers and landowners. There are contracts for equipment, labor, marketing, production, and services. These contracts use various methods of payment (e.g., hours for tractors, revenue share for marketing) and impose various duties on both farmers and other contracting parties. These duties include sharing input costs, using specified techniques, and performing tasks at specified times (Otsuka *et al*., 2016).

The contracts can be simple and short-term, or they can be complicated and long-term. Contract farming have successfully enabled small-scale farmers to commercialize their farming operations through the creation of domestic and international market linkages. It is commonly seen as a suitable means of linking poor farmers to markets, improving household welfare, and promoting the modernization of the agricultural sector. In Nigeria, the contribution of contract farming is evident in the substantial increase in private sector investment in the cassava downstream activities. It is important that farmers collaborate with cassava based industries to ensure sustainable supply of required quality of cassava. Contract farming is therefore promoted by policy makers and development agencies. It is not a new phenomenon, the globalization of agricultural trade and the rapid modernization of agricultural value chains in northern Nigeria, however, has generated renewed interest in the topic. Numerous studies analyze whether farm households benefit from contract farming, which is important in light of increasing policy support. Most studies focus on profits and household income, some explore implications for other dimensions of household welfare (Porter and Philips-Howard, 1997).

Most studies (Prowse and Thirion, 2012; Otsuka *et* al. 2016) found that contract farming improves welfare. Contract farming may affect household welfare through different channels. For example, contracts that specify the price or quantity of products to be delivered can reduce transaction costs and uncertainty around prices and marketing options, thus facilitating planning and investments. Contract farming may also improve farmers' access to extension, financial services, and farm inputs, thereby enabling farmers to increase productivity, improve product quality, or adopt more-profitable crops.

Although participating households are largely found to benefit, implications for their communities at large are less well understood. This is an important shortcoming, given that contract farming receives attention from policy makers precisely because of its expected contribution toward rural development. At least in the medium term, however, the general equilibrium effects of contract farming seem less clear.

In Nigeria, cassava is an indigenous root and tuber crop grown in the North Central, South West and South East. It is of high importance because of its potential contribution to the total food intake of the populace. The major reason for low income among the smallholder farmers is lack of steady market for their produce which have reduced their production. This have led to high rate of poverty among the smallholder farmers. Poverty remain the biggest development challenges of our time. Nevertheless, there has been a persistent paradigm in the development debate on agricultural productivity of smallholders as the key to achieving these goals of alleviating poverty and ensuring food security simultaneously. On the other hand, contract farming can reduce poverty in farming communities (Fayet and Vermeulen, 2014). Particularly, in developing countries the advantages of contract farming include the promotion of the access to higher income, shifting from low-nutritious foods to high-nutritious foods, liberalized markets, improved transport and logistics accessibility, and using modern technology in agriculture (Reardon and Timmer, 2014; Otsuka, *et al*. 2016; FAO, 2017).

There is no definite information about variance in gender participation in contract farming. Women perform different functions, have unequal decision power and differences in access to production resources like land. According to the tradition in many societies, women are ban from owning and inheriting land, when they do, they receive only a fraction of the land of an inferior quality and with less secure right than those held by men. According to the Gender in Nigeria's report (2012) by the British Council, average land ownership by women across the country was found to be significantly low at less than 10%; 4% in the North-East, and just over 10% in the South-East and South-South parts of the country (Sahel Capital and Advisory, 2014). These figures across Nigeria imply that there is a general lack of female land ownership and the limiting effect of this phenomenon is most felt when sourcing for bank loans. Given that banks often demand land as collateral, this poses a setback for most female farmers in accessing loans.

The above premise underscored the need to understand the gender dimension in cassava production via contract farming in Kogi State, Nigeria. The outcome of this study will provide gender based empirical information on; source of information on contract farming and related production activities.

METHODOLOGY

The study area is Kogi State**.** Geographically, it is located between latitude $6^{0}30^{1}$N and $8^{0}48^{1}$N and Longitude $5^{0}23^{1}$E and $7^{0}48^{1}$E sharing boundaries with Kwara, Ondo, Ekiti, Niger, Benue, Nassarawa, Anambra, Enugu, Edo States as well as the Federal Capital Territory. Annual rainfall stands between 1016mm and 1524mm. It has a maximum temperature of 33.2ºC and average temperature of 22.8ºC, with an average humidity of 70%. Kogi State is marked with two distinct seasons in a year; these are wet and dry seasons. The wet season spans between middle of March and October and the dry season is usually experienced between the months of October and March. It has a land area of 283,135,359Km2 (KSPC, 1997).

The population for this study comprised all the registered 5,406 cassava contract farmers in Kogi State. The sample size of 372 was calculated in line with the formula provided by Yamane (1967). A multi-stage sampling technique was used for the selection of the respondents for the study. The first stage involves the selection of the three (3) senatorial districts (Kogi West, East and Central) in the State. In stage two, four (4) farmer clusters as delineated by contracting organization in Kogi State were randomly selected from each senatorial district. A total of twelve (12) cassava contract clusters in Kogi State were used for the study. The third stage involves the random selection of thirty-one (31) cassava contract farmers from each of the selected clusters. Therefore, the sample size for the study is 372 cassava contract farmers. The selected senatorial districts and clusters are shown in Table 1.

Table 1: Sampled Senatorial Districts and Clusters

Districts	Clusters	Sample Frame	Sample Size
Kogi Central	Adavi, Achabo, Gegu, Lokoja (Crest farmers)	1,390	31 x 4 = 124
Kogi East	Ojapata, Olamaboro, Ajaokuta, Ankpa	2,810	31 x 4 = 124
Kogi West	Ado Ape, Egbeda, Iyara, Ayere	1,206	31 x 4 = 124
Total	**12**	**5,406**	**372**

Source: Author's computation from the sample frame

The data for this study were obtained from primary data. A carefully structured questionnaire was drafted and distributed in order to gather the data required. The data obtained were analysed using descriptive statistics of percentages, means and standard deviation.

RESULTS AND DISCUSSION

Socioeconomic Characteristics of the Respondents

The socioeconomic distribution of cassava contract farmers presented in Table 2 shows the dominance of male farmers as compared with the females. This result is in line with most African settings where male are more involved in farming operations and can also easily make decision such as joining cooperatives or associations. The involvement of more male cassava farmers could also be associated with the nature of activities in cassava production which are energy demanding. Despite the larger proportion of male respondents, the proportion (34.17%) of female farmers in cassava contract farming is encouraging and a welcome development. This finding agrees with an earlier report by Fadayomi (2003) who found that male constitutes the major source of agricultural hard labour in Nigeria and also found in farming sector than the female counterpart. The result further shows a mean age of 37.21 years with a standard deviation of 7.68 years. It is suffice to say that youth or male and female farmers who are in their productive age range are more involved in cassava contract farming. This will expectedly affect their output and productivity, positively. The average age recorded in this study may not be unconnected with the current economic realities where most rural and urban residents are being 'forced' to go back to the land, and one of the go to crop is cassava. Cassava has various products which may explain why most productive age group are involved in its production. This finding agrees with Ofuka (2011) who reported that most farmers were within their prime age 20-50years. Ogundele and Okoruwa (2006) asserted that only those within the productive strength are likely to possess the strength to carryout farming operations.

Table 2 also shows that the majority (83.89%) of the respondents are married, while 14.72% and 1.39% were single and divorced, respectively. More married respondents were involved in cassava contract farming. The involvement of this category of persons may be related to household head's responsibility to provide food for his family members. The findings on marital status is also a plus as married farmers were found to be early adopters of agricultural innovations. According to Mohammed *et al.,* (2014), adoption of agricultural production technologies is more observed among married farmers. The finding of this study on marital status is in agreement with Alarima *et al*., (2017) who reported that greater percentage (98.80 %) of farmers in Nigeria were married.

The mean household size among cassava contract farmers in the area was 2 members. This finding implies that most of the cassava contract farmers had small household size. The reported household size in this study is beneficial in the lens of family welfare; however, low household size may negatively affect labour availability for farming activities.

Table 2: Socioeconomic Characteristics of the Respondents

Socioeconomic Characteristics	Frequency	Percentage	Mean
Sex			
Male	237	65.83	
Female	123	34.17	
Age (years)			
20-45	273	75.83	37.21±7.68
46-65	78	21.67	
66-85	9	2.50	
Marital Status			
Single	53	14.72	
Married	302	83.89	
Divorced	5	1.39	
Major Occupation			
Farming	82	22.78	
Okada	39	10.83	
Civil service	158	43.89	
Trading	59	16.39	
Public service	20	5.56	
Artisanship	2	0.56	
Educational Qualification			
Primary education	48	13.33	
Secondary education	152	42.22	
Tertiary education	129	35.56	
Informal education	32	8.89	
Farming Experience (years)			
1-10	249	69.17	11.14±7.13
11-20	74	20.56	
21-30	26	7.22	
31-40	11	3.06	
Farm size (hectares)			
0.1-2.0	92	25.56	
2.1-4.0	248	68.89	3.14±0.94
4.1-6.0	20	5.56	
Household Size (number)			
1-4	187	51.94	2±1.3
5-8	149	41.39	
9-12	24	6.67	
Labour Type			
Hired	165	45.83	
Family	188	52.22	
Both	07	1.94	
Extension Access			
Access	356	99.44	
No access	02	0.56	

Source: Field Survey, 2022

The finding agrees with Balogun, *et al*., (2014) who reported a household size of between 5 and 7 members and positioned that larger household size increases labour force and reduction in the overall production cost. Following the reported household size, about half of the respondents used family labour while almost similar percentage used hired labour on their cassava farms.

The majority (91.11 %) of the cassava contract farmers in the area attained different levels of educational qualifications while only 8.89 % had no formal education. However, larger percentage (42.22%) of the educated farmers had secondary education. Education could influence decision making on contract farming. Educated cassava contract farmers could read and interpret instructions and labels on farming inputs which will enhance their understanding and subsequent adoption. This finding agrees with an earlier survey on educational attainment Mutambra (2013) observed that 78% of farmers in Nigeria have various levels of educational qualification, and higher educational attainment could facilitate the adoption of newer technologies among Nigerian farmers.

Table 2 also revealed that most (43.89%) of the cassava contract farmers in the study area are civil servants, while 22.78% of the respondents had farming as major occupation. The occupational spread noticed in this study explains the role of agriculture in household welfare. It is observed in this study that respondents with other major occupation aside from farming, were also involved in cassava contract farming which serves as source of food and as an income generating activity for household welfare. This finding agrees with Adejo *et al*., (2019) who reported that farming was the major occupation among rural households in Kogi State, Nigeria.

The result presented in Table 2 also shows a mean farming experience and standard deviation of 11.14 years and 7.13 years, respectively. This would have implications on participation in contract farming with its expected impact on output. The finding agrees with Idrisa *et al.,* (2012) when they reported that experience depicts a good signal for adoption since experience helps to convince the farmer of the importance of innovation. Also, Agbamu (2006) stated that experience impacts positively on innovation adoption.

The distribution of respondents according to farm size used in cassava production shows a mean hectare of farm size for cassava production of 3.14 hectares. This confirms that most of the cassava farmers in the area still operate on a small scale, perhaps for family consumption and little for marketing. The finding agrees with Shaibu *et al*., (2020) who reported an average farm size of 2.49 hectares among crop farmers in Kogi State, Nigeria.

Most (52.22%) of the contract farmers used family labour, 45.83% hired labour for cassava production and 1.94% used both family and hired labour in cassava production. Table 2 further shows that 99.4% of the respondents have access to extension services while only 0.56% did not have access to agricultural extension services. Farmers can have access to extension services through various sources; private and public extension agents, mass media, fellow farmers, among others.

Source of Information on Contract Farming

The various source of information on contract farming among the respondents are presented in Table 3. The results were ranked following the percentage of the respective research item. The pooled result on Table 4.2 shows that the majority (72.78%) of the respondents ticked the ADP as source of information on cassava contract farming. This was followed by cassava farmers association (72.22%), friends (65%), cooperative society (25%), posters (18.89%), radio programmes (13.61%), hand bills (4.44%), contractors/agents (3.61%), newspapers (2.22%), and religious gathering (1.11%).

The respondents ranked the Agricultural Development Project (ADP) as the major source of agricultural information on contract farming. This finding is not surprising considering the fact that about 99% of the respondents claimed they had access to agricultural extension services. The mandate of the ADP is to disseminate agricultural information to farmers using extension training and visit model. Agricultural extension agents who work under the ADP system provide farmers with information on contract farming and its associated benefits. This finding agrees with Adejoh *et al*., (2016) who reported similar result among farmers in Kogi State, Nigeria. The findings of this study also generally agrees with Opara (2008) who reported that that 88.1% of the farmers in Imo State of Nigeria indicated agricultural extension agents as their source of information.

Closely ranked to the ADP is the cassava farmers' association. The cassava contract farmers agreed to sourcing agricultural information on cassava contract from their association. Farmers association are similar to co-operative organizations which render credit, purchasing, marketing and agricultural extension services to their members. An understanding of the farmers' associations will give an idea of how the rural community is organized for mutual benefit. The farmers' association in the study area is a rather unique one, and it is more than a multi-purpose co-operative society, as is generally known in many parts of the world. This finding agrees with Wang (2019) who reported that crop farmers in Taiwan access agricultural information through cooperative associations.

Table 3: Sources of Information on Contract Farming

	Male, n = 237	**Female, n = 123**	**Pooled, n = 360**		
Source of Information	Freq. (%)	Freq. (%)	Freq.*	Percentage	Ranking
Agricultural Devt. Project	166 (70.04)	96 (78.05)	262	72.78	1st
Cassava farmers association	137 (57.81)	123 (100.00)	260	72.22	2nd
Friends	129 (54.43)	105 (85.37)	234	65.00	3rd
Cooperative society	54 (22.78)	36 (29.27)	90	25.00	4th
Posters	51 (21.52)	17 (13.82)	68	18.89	5th
Radio programmes	20 (8.44)	29 (23.58)	49	13.61	6th
Hand bills	10 (4.22)	06 (4.88)	16	4.44	7th
Contractors/agents	10 (4.22)	03 (2.44)	13	3.61	8th
Newspapers	03 (1.27)	05 (4.07)	8	2.22	9th
Religious gathering	01 (0.42)	03 (2.44)	4	1.11	10th

Source: Field Survey, 2022 NOTE: * = multiple responses Figures in parentheses are percentage

Another major source of agricultural information on contract farming is friends or fellow farmers. This finding agrees with Olajide (2011) who reported that 76.3% of crop farmers in Oyo State sourced for agricultural information from fellow farmers. A study conducted by Funom and Soyemi (2019) in Nigeria, on information dissemination among soya beans farmers' reports that information and knowledge can bring change in the way people do farming. This is so due to the fact that a well-informed farmer is in a good position to make decision on what to grow, where, when and how to do it in order to have positive results. Nyamba (2017) adds that the most commonly searched information by farmers has been on know-how aspects which give them fundamental agricultural facts. Yusuf (2014) informed that smallholder farmers can be provided with agricultural information and knowledge from various sources through different mechanisms such as agricultural extension services, fellow farmers, meetings, workshops, and seminars.

Difference in Gender Participation in the Production Activities of Cassava Contract Farming

The distribution of respondents according to gender participation in the production activities of cassava contract farming in the study area is presented in Table 4.

Table 4: Gender Difference in Production Activities

Production Activities	*Male n = 237	*Female, n = 123	*Pooled n = 360
Stumping	186 (78.48)	8 (6.50)	194 (53.89)
Making ridges	170 (72.57)	7 (5.69)	177 (49.17)
Stem cutting	141(59.49)	54 (43.90)	195 (54.17)
Planting	193 (81.43)	66 (53.66)	259 (71.94)
Weeding	155 (65.40)	37 (30.08)	192 (53.33)
Fertilizer application	145 (61.81)	19 (15.45)	164 (45.56)
Agrochemical application	212 (89.45)	9 (7.32)	221 (61.39)
Harvesting	192 (81.01)	66 (53.66)	198 (55.00)
Loading	125 (52.74)	75 (60.97)	200 (55.56)
Stem picking and bundling	110 (46.41)	96 (78.05)	206 (57.22)

Source: Field Survey, 2022 NOTE:* = multiple responses

Table 4 shows that the majority (78.05%) of the female contract farmers were involved in stem picking and bundling, 60.97% of the female contract farmers were involved in loading, 53.66% each of the female respondents were doing planting and harvesting while 43.90% of the female contract farmers were involved in stem cutting. Making ridges was the least (5.69%) production activity carried out by the female contract farmers in the study area. The result in Table 4 also reveals that the majority (89.45%) of the male contract farmers were involved in agrochemical application, 81.43% were involved in planting, 81.01% were involved in harvesting, 78.48% were involved in stumping, 72.57% of the male contract farmers were involved in making ridges, 65.40% of the male respondents were involved in weeding, 61.81% were into fertilizer application, and 59.49% of the male contract farmers were doing stem cutting. The least (46.41%) cassava production activity carried performed by the male contract farmers in the study area was stem picking and bundling.

The difference in gender participation in the production activities of cassava contract farming revealed that the majority (78.05%) of the female contract farmers were involved in stem picking and bundling, 60.97% of the female contract farmers were involved in loading, 53.66% each of the female respondents were doing planting and harvesting while 43.90% of the female contract farmers were involved in stem cutting.

The involvement of female contract farmers in these production activities could be associated with the less energy requirement of these activities. Interestingly, women are gradually being involved in some agricultural activities that were dominated by the men. Mohammed (2014) reported that the involvement of both sexes in various field activities may be sex specific, but they are complimentary and reciprocal. The author further revealed that the involvement of women was on the increase (from 32 to 36%), while that of men declined relatively (from 68 to 64%).This finding agrees with Okwusi and Aboh (2007) who reported that women farmers in Imo State were more involved in weeding, harvesting, processing, marketing and fertilizer application.

The findings from this study further revealed that the majority (89.45%) of the male contract farmers were involved in agrochemical application, 81.43% were involved in planting, 81.01% were involved in harvesting, 78.48% were involved in stumping, 72.57% of the male contract farmers were involved in making ridges, 65.40% of the male respondents were involved in weeding, 61.81% were into fertilizer application, and 59.49% of the male contract farmers were doing stem cutting. This result agrees with Okwusi and Aboh (2007) who found that men were more involved in land clearing, bush burning, gathering large stumps, and planting activities. The involvement of men in various tedious farming activities in cassava contract farming could be associated with the use of *crude* farming implements which require some level of energy that the female cassava farmers may not necessarily possess. Rahman (2008) positioned that Women make a significant contribution to food production and processing, but men seem to take more of the farm decisions and control the productive resources.

CONCLUSION AND RECOMMENDATIONS

It can be concluded from findings of this study that information on cassava contract farming in the State were sourced from the Agricultural Development Project (ADP) through extension delivery services, cassava farmers associations and fellow farmers. Also, male cassava contract farmers are more involved in agrochemical application, planting, harvesting, stumping, making ridges weeding, and fertilizer application, while their female counterpart were involved in stem picking and bundling. Based on findings from this study, the following recommendations are made:

1. About 1/3 of the cassava contract farmers were females. To increase women's participation and benefit from contract farming, contracting industries should take intra-household relations into account. Apportionment of contracts and payments should be made through the principal workers rather than the heads of the households. Thus, women will be able to register into contract farming in their own name and receive payment for the work that they do. Promoting literacy among women will also help in increasing their chances to enter into and benefit from contract farming.

2. Government and Development Partners should work together with agribusiness companies to guarantee that membership criteria offer equal opportunities to everyone interested in contract farming.

3. Since contract industries are not usually interested in cassava farmers with low level of production, land reform initiatives/programmes should be permitted that bring change in ownership structure instead of dividing the land into smaller units, for example, it could be possible to distribute land to groups of farmers collectively, such as through cooperatives.

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