



SOCIO-ECONOMIC INDICATORS AND RISKS OF COTTON CONTRACT FARMERS IN EASTERN AGRICULTURAL ZONE OF NIGER STATE, NIGERIA

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ABSTRACT

This study examined socio-economic indicators and risks of cotton contract farmers in eastern agricultural zone of Niger State, Nigeria. Multi-stage sampling procedure was employed to purposively and randomly select 122 respondents from the study area. Interview and questionnaire methods were used in the data collection and analyzed using descriptive statistics (frequency and percentage) and inferential statistics (chi-square). The results disclosed that 64.7% of cotton contract farmers were between the ages of 20-29 years, single (70.5%), majority (72.1%) acquired tertiary education, 89.3% had contact farming experience of nine years and majority (81.1%) and (86.9%) had household size of 5-9 persons and land owned by inheritance, respectively. Many (46.7%) of the farmers perceived price stability as the benefits for their participation in cotton contract farming and majority (68.9%) learnt about cotton contract farming from extension agents and Agricultural Development Projects. The findings further showed a significant ($\chi^2 = 56.246$, $P < 0.05$) relationship between farmers participation in cotton contract farming and sex. The chi-square results revealed that there was significant ($\chi^2 = 97.155$, $P < 0.05$) relationship between farmers participation in cotton contract farming and educational levels. The study concluded that there was significant relationship between farmer's participation in cotton contract farming and their socio-economic variables such as sex, marital status, highest education level attained, contact with extension agent and the perceived benefits. The study recommended regular dissemination of information to the cotton contract farmers in the study area in order to take advantage of comparative advantages and price stability.

Keywords: Contract agreement, Cotton, Multi-stage sampling, Socio-economic, Risks.

INTRODUCTION

Proponents of contract farming often argue that contract farming model is aimed at linking small-scale farmers to lucrative markets in order to solve a number of constraints faced by the small-scale farmers in an attempt for them diversifying into high-value agribusiness value chain commodities. In most cases, there is both market as well as environmental distortions and failures causing imbalance between the buyer (often a large agribusiness firms or industries) and the farmers which led to a contract agreement most often unfavorable to the farmers. In furtherance to this accretions, Singh (2000) argued that small farmers are often excluded from contract farming schemes or agreements, resulting in greater income inequality and social tensions in rural areas.

According to Ajjan (2021), the farmer is contracted to plant the contractor's crop on his land; harvest and deliver to the contractor a quantum of produce, based on anticipated yield



and contracted acreage. This could be at a pre-agreed price. Towards commercialization, the contractor can supply the farmer with selected inputs. To guarantee survival and growth objective of the farming system, it is important to ensure good land preparation and planting, crop monitoring during growing period harvesting and procurement, transportation logistics prompt farmer payment system. The author further emphasized in contract farming, in line with technology transfer, it is important practice good extension services team, selection and training, farmer education program, field trials at farmer fields, multi-locational and crop timing. Also, on research and development (R & D) activities, there should be evaluation of promising varieties and hybrids; multi locational trials and short-listing, selection and sustainable blueprint for agricultural practices after adapting to local conditions, to suit intellectual and financial means of the farmer; and finally, evaluation of farmer economics model and setting up sustainable demonstration farming.

A large majority of empirical studies suggest that contract farming schemes raise the income of farmers participating in the schemes. The evidence is less clear on the degree to which buyers are willing to contract with small-scale farmers, the answer depends on the commodity, the market, and the policy environment. Contract farming may be defined as agricultural production 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. Often, the buyer provides the farmer with technical assistance, seeds, fertilizer, and or other inputs on credit and offers a guaranteed price for the output. Contract farming may be defined as agricultural production 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. Often, the buyer provides the farmer with technical assistance, seeds, fertilizer, and other inputs on credit and offers a guaranteed price for the output (Singh, 2000; Eaton and Shepherd, 2001).

Cotton is grown in 33 countries of Sub-Saharan Africa, but the largest producers are Burkina Faso, Nigeria, Tanzania, Benin, Mozambique, Zimbabwe, and Mali, each of which harvested more than 200 thousand tons of seed cotton in 2008. The seed cotton is processed into cotton lint, cotton seed oil, cotton oil cake (for animal feed), and other by-products. Some cotton lint is used for domestic textile industries, but about 70% of the lint is exported. Cotton exported from Sub-Saharan African countries were worth US 1.2 billion in 2008. The leading exporters were Mali, Burkina Faso, Benin, Tanzania, and Zimbabwe, each of which had exports revenues of more than USD100 million in 2008 (Food and Agriculture Organization [FAO], 2011).based on the current trend the amount sold per cotton tone can be estimated around ₦150, 000 to ₦180,000 per hectare.

Contract farming is not totally new to Nigeria. The success of cotton production explains the depth of contract farming in Nigeria. It is a formal contract between producers (farmers) and buyers generally referred as processors or exporters or a company (Eaton and Shepherd, 2001). Contract farming can be defined as an agreement between farmers and contracting firms for the production and supply of agricultural products under advance agreements frequently at predetermined prices. Contracts farming allow firms to participate in and exert control over the production process without owing or operating the farm. The arrangement can vary by crops and contracting firms. The contract may be for market support contractors, pre-harvest agreement essentially between firms and farmers to a particular set of condition for the sale and purchase of crop.

Although numerous studies confirm that contract farmer's gain from participation, the studies also show reveal frequent problems in these schemes. In fact, there is a relatively high rate of failure for contract farming schemes in developing countries. This is particularly evident in Kenya, which has a history of contract farming going back to the colonial period. Review of the evolution of contract



farming schemes in Kenya reveal a high rate of turnover as schemes collapse and new ones are launched (Ngigi and Minot, 2010).

Eva-Marie and Marc (2020) in a study on the implications of contract farming for household income and labor demand, found that contract farmers obtain higher incomes than their counterparts without contracts only in some countries. Contract farmers in most countries exhibit increased demand for hired labor, which suggests that contract farming stimulates employment, yet we do not find evidence of spillover effects at the community level. Our results challenge the notion that contract farming unambiguously improves welfare. We discuss why our results may diverge from previous findings and propose research designs that yield greater internal and external validity. Implications for policy and research are relevant beyond contract farming. The contract specifies price, quality and pricing production management contract and resources support contract (Eaton and Shepherd, 2001). In view of this, the research provided answers to the following questions:

- i. What were the socio-economic characteristics of cotton contract farmers?
- ii. What determines the farmers' perceived benefits derivable by participating in cotton contract farming?
- iii. To what extent has the socio-economic factors and attitude influenced the farmers' participation in cotton contract farming?

The broad objective of the study was to analyze the socio-economic indicators and risks of cotton farmers' participation in contract farming in Eastern Agricultural Zone of Niger State, Nigeria. The specific objectives were to:

- i. Describe the socio-economic characteristics of cotton contract farmers in the study area;
- ii. Determine the farmers' perceived benefits derivable by participating in cotton contract farming; and
- iii. Determine the extent of influence of socio-economic factors and attitude on the years of the farmers' participation in cotton contract farming.

MATERIALS AND METHODS

The Study Area

The study was carried out in Niger State of Nigeria. The State was created in 1976 with 25 Local Government Areas (LGAs). The LGAs in the Eastern Agricultural Zone of the State that constitutes the study area were Kontogora, Burgu and Rijo. The LGAs have common characteristics like soil, crops, climate, people/tribes and occupation. The State is notable for contract farming in cotton. The State is covering a total land area of 76,363 km par 74,244 square kilometer. Kaduna State and Federal Capital Territory (FCT) were her borders to the north-east and south-east, respectively; Zamfara State borders the north, Kebbi State in the west, Kogi State in the south and Kwara State in the south-west, while the Republic of Benin her north-west (http://en.wikipedia.org/wiki/Niger_State).

The study area is in the North Central Zone of Nigeria, on latitude 10° 24' 11 N and longitude 5° 28' 14 E. The State has an estimated population of about 3,950,249 as at 2006 (NPC, 2006). The three principal ethnic groups of the State are the Nupe, the Gwari and the Hausa. Other groups include the Koro, Kadara, Kambari, Kamuku, Pangu, Bassa, Bauchi, Fulani, Dukawa, Gabo, Godara, Ganagana, Mauchi, Ayadi, Ingwai, Dido, Kadanda, Gulengi, Abi Shiwa and Shigini.

The State experiences distinct dry and wet seasons with annual rain fall varying from 1,100 mm in the northern part to 1,600 mm in the southern parts. The maximum temperature (usually not more than 940°C) is recorded between March and June, while the minimum is usually between December and January. The vegetation type in the area is a typical grassland



Savannah with scattered trees. The major occupation in the study area is agricultural practices and civil service except the selected few that are engaged in trading.

Sampling Procedure

A multi-stage random sampling procedure was employed in this study. The State Agricultural Development Project (ADP) comprises of three Agricultural Zones namely: southern, northern and eastern agricultural zone (Niger State Agricultural Development Project [NSADP], 2008). The first stage involves purposive selection of the eastern agricultural zone because the zone was a major area in the State known for cotton contract farming. The study area was also chosen because of the soil requirement, weather, latitude, longitude which could trigger cotton production efficiency and profit margin. Furthermore, most of farmers venture into contract farming (CF) because it was a source of livelihoods for the farmers in terms of employment, increased income, production, better nutrition and health of the members of the households.

The second stage was based on random selection of three LGAs (Kontagora, Burgu and Rijo) from the southern agricultural zone. In Kontagora LGA, two districts were selected namely: Kontagora North and Kontagora South; in Burgu LGA, five districts were selected namely: Babanna, Kabe, Wawa, Kararaude and New Bussa; and in Rijo LGA, four districts were selected namely: Rijo, Darangi, Genu and Duku. Finally, a systematic random sampling was employed to randomly select a total 122 cotton contract farmers from the three LGAs: Kontagora (20 farmers), Burgu (60 farmers) and Rijo (42 farmers) from the study area. The use of random sampling techniques was to enable the respondents' equal chance of being selected, that is, simplified procedures and eliminated bias (Sani and Silas, 2012).

Method of Data Collection

Primary data was used for this study. The primary data were collected from the selected farmers with the aid of structured questionnaire administered randomly to the farmers. The focus group interview was also employed in the data collection.

Method of Data Analysis

Descriptive statistics (percentages, mean) and inferential statistics (chi-square) were the tools used to analyze the data. Descriptive statistics used in this study comprised percentages, means and frequency employed to achieve objectives i, ii and inferential statistics to achieve objective iii.

RESULTS AND DISCUSSION

Socio-economic Characteristics of the Respondents

Table 1 show that 65.6% of the respondents were males while 34.4% were females. This implies that there were more males were engaged in cotton contract farming than females in the study area. This finding agreed with that of Achike (2002) who found out that more males were involved in farming than women in Enugu State. Majority (64.7%) of the respondents were between the ages of 20-29 years. According to Ogungbile *et al.* (2002), farmer's age may influence his adoption of innovation. This result is contrary to what was obtained by Ibrahim *et al.* (2008) in a study of rice farmers in Badegi, Niger State where they observed that 69.7% of the respondents were below 50 years of age and Hassan (2010) reported that only 22.4% of the respondents were above 50 years of age. In the same vein, Adegboye (2011) discovered that only 14.7% of rice farmers in Kwara State were older than 50 years and also in a study of ginger farmers in Kaduna State noted that only 20.0% of the respondents were above 50 years of age. In this study, it was observed that the most active age group fell between 20-29 years (64.6%) which is at variance with the study conducted by Oyesola and Adegboye (2011) which opined that mean age group falls between 50 years and above. The



findings of this study imply that majority of the respondents were young progressive farmers devoting their energy to a more productive enterprise (cotton contract farming).

Table 1: Socio-economic characteristics of cotton contract farmers

Variables	Frequency	Percentage
Age (years):		
20 – 29	79	64.7
30 – 39	27	22.1
40 – 49	13	10.6
50 and above	3	2.6
Total	122	100.00
Sex:		
Male	80	65.6
Female	42	34.4
Total	122	100
Marital status:		
Single	86	70.5
Married	30	24.6
Divorced	5	4.1
Widowed	1	0.8
Total	122	100.00
Education level:		
Primary	7	5.8
Secondary	27	22.1
Tertiary	88	72.1
Total	122	100
Farming experience (years):		
1 – 9	109	89.3
10 – 19	9	7.4
20 – 29	4	3.3
Total	122	100
Household size:		
1 – 4	11	9.0
5 – 9	99	81.0
10-14	11	9.0
15 and above	1	1.0
Total	122	100
Farm size (ha):		
0.5 – 1.4	11	9.0
1.5 – 2.4	105	86.1
2.51 – 3.4	6	4.9
Total	122	100
Land ownership:		
Inheritance	106	86.9
Purchased	12	9.8
Gift	4	3.3
Total	122	100

Table 1 also reveals that majority (70.5%) of the cotton contract farmers were single. This result contradicts Oyesola and Adegboye (2011) who observed that 98.5% married among farmers in Gombe State and rice farmers in Kwara State where it was observed that 85.3% of



respondents were married. Marital status may become an important issue or factor in agricultural production especially when farm labour supplied is limited. This study disagreed with Ndanitsa (2008) and Umaru (2008) suggesting that large family size is a determinant of adequate family labor that could impact positively by way of cultivating large hectares of land through contract farming. Although marital status is a sign of social symbols which attract prestige, higher percentage of unmarried respondents reflects a symbol of active adult in the study area. Majority (72.1%) of cotton contract farmers acquired tertiary education. This result is in line with the findings of Oladeji *et al.* (2011) that farmers have one form of education or the other. The results were in conformity with the fact that education is important especially in the acquisition of knowledge and skill in different areas of human endeavors (Olaleye, 2000). Hassan (2010) also stated that attaining good education influences positive growth and development of their society. According to Table 1, majority (89.3%) had contact farming experience of 9 years in the study area. This implied that cotton contract had been accepted and practiced among the farmers. The result is similar to the observations of Adegboye (2011) and Ndanitsa (2008) where majority of the respondents were experienced farmers facilitates the easy detection of any change brought into their business in order to further enhance their participation About 81% of the cotton contract farmers had 5 - 9 members in the family signifying that the contract farmers in the study area were polygamists.

Table 1: Socio-economic characteristics of cotton contract farmers **Cont'd.**

Variables	Frequency	Percentage
Sources of farm labour:		
Family	109	89.3
Hired	13	10.7
Total	122	100
Initial capital (₦):		
50,000 – 99,000	110	90.2
100,000 – 199,000	8	6.6
200,000 – 299,000	2	1.6
300,000 and above	2	1.6
Total	122	100
Sources of capital:		
Banks	28	23.0
Cooperatives	90	73.7
Savings	4	3.3
Total	122	100

With regards to the household size of the respondents, majority (86.1%) had up to 2.4 hectares implying that the farmers were small scale farmers. The study disclosed that majority (86.9%) of the respondents acquired land by inheritance. This can be inferred that most family member possess arable land through their genealogy. As shown in the Table 1, majority (89.3%) had the source of labour through family members. The study is in conformity with the research conducted by Ndanitsa (2008) and Umaru (2008) suggesting that large farming size is a determinant of adequate family labour. Accordingly, marital status may become an important issue or factor in agricultural production especially when a farm labour supply is limited (Oyesola and Adeboye (2011). Hence, the hired labours (10.70%) were not most preferred probably due to its high costs and availability. The result reveals that 90.2% of cotton contract farmers had level of initial capital or income between ₦50,000 and ₦99,000 only. It



is an indication that most cotton contract farmers are operating on low income, hence, low earnings and small size of operations.

Furthermore, Table 1 results shows that high percentage of cotton contract farmers (73.8%) had their sources of income from cooperative society. This confirms, that rural farmers does not access loan from Banks (28%) to finance their contract farming rather from cooperative. The study identifies cooperative societies in the study area as virile to support contract farmers. The result is similar to the research conducted by Hassan and Azril (2009) that participation in community based farm project had other sources of income.

Perceived Benefits of Farmers' Participation in Cotton Contract Farming

The results of the perceived benefits of the respondents are revealed in Table 2. A cursory look at the Table 2 results revealed that most of the respondents (46.7%) perceived price stability as benefits in cotton contract farming. According to Agbantele *et al.* (2008), information is an important factor for accelerating agricultural development by increasing agricultural production and improved marketing and distribution. This is an indication that the respondent had problem in disposal of their farm product probably due to problems associated with the cotton marketing board which is associated with local agent buyers of the produce since marketing is very important when considering production including agricultural production. It is the performance of business activities that direct the flow of goods and services from producers to the consumers. The market process begins at that point and continues until a consumer buys the products at a retail counter or until it is purchased as a raw material for another production phase (Johnson, 1985). Judging from the above statement, marketing intervention is pertinent especially when farmers are assured of the market, they can produce in large quantity without fear. The author further stated that without sustainable storage infrastructure, market stalls, there will be postharvest issues with the farmers who had the intention of participating in the contract farming. Eventually this postharvest losses may discourage them and the contracting firm may take the advantage of reviewing the contract agreement, thus, having product price effects.

Table 2: Perceived benefits of cotton contract farming

Perceived benefits	Frequency	Percentage
Price stability	57	46.7
Timely input	19	15.6
Market intervention	27	22.1
Acquisition of technical skills	14	11.5
Information from extension agent	3	2.5
High output/price stability	1	0.8
Price stability/gain technical skills	1	0.8
Total	122	100

Sources of Information Concerning Cotton Contract Farming

Table 3 shows that majority (68.9%) learnt about cotton contract farming from extension agents and Agricultural Development Projects. This implies that extension activities are strengthened and frequently assessed in the study area. Agbantele *et al.* (2008) corroborated these findings stating that to achieve the importance of agriculture, there have to be proper and efficient ways of information sharing, skills and knowledge. According to the authors, knowledge and information are important factors for accelerating agricultural development by increasing agricultural production and sustainability in cotton contract farming.



Table 3: The respondents according to sources of information on cotton contract farming

Sources of information	Frequency	Percentage
Friends	29	23.7
Extension agent/ADPs	84	68.9
From media	9	7.4
Total	122	100

Relationship of the Socio-economic Factors with Cotton Contract Farming

The result of null hypothesis between participation in cotton contract farming and selected socio-economic variables of the respondents using chi-square analysis was presented on Table 4. The result revealed that, there was significant ($P \leq 0.05$) relationship between the farmer's participation in cotton contract farming and the identified socio-economic variables like sex, marital status, highest education level attained, contact with extension agent and perceived benefits. This indicated that, the null hypothesis is rejected in favour of the alternative hypothesis. This implies that, the socio-economic variables of the respondents had influence on farmers' participation in cotton contract farming. This is probably because the socio-economic variables play a vital role in a farmer's life. In addition, the factors greatly influenced the farmers' willingness and ability to participate in cotton contract farming which in turn helped in raising their income and standard of living. Furthermore, the result also shows that there was a significant ($\chi^2 = 56.246$, $P \leq 0.05$) relationship between farmers participation in cotton contract farming and sex. Men were believed to be stronger than women. According to Sani and Campbell (2010), sex is sensitive to certain occupation. Majority of the farmers involved in cotton contract farming in the study area. The relationship between farmers participation in cotton contract farming and marital status of the respondents was significant ($\chi^2 = 77.658$, $P \leq 0.05$). Marital status distribution is very important as it helps one to have an idea of a farmer's devotion to cotton contract farming and the likely consequences the farm business activities. In addition, marital status of a person determines the degree of responsibility of that person in the society and the manner in which one judiciously allocate the scarce resources at his or her disposal.

Table 4: Relationship of participating cotton contract farming and socio-economic variables

Variables	Chi-value	P-value	Df.
Sex	56.246	0.030**	19
Highest education level attained	97.155	0.011**	76
Marital status	77.658	0.026**	57
Sources of capital	1.374	0.721	95
Contact with extension agent	85.807	0.026**	39
Sources of information on cotton contract farming	4.534	0.955	38
Perceived benefits	91.503	0.014**	95
Level of risk involved in cotton contract farming	1.346	0.775	98

Note: **significant at 0.5% level

The chi-square analysis result in Table 4 further revealed that there was significant ($\chi^2 = 97.155$, $P \leq 0.05$) relationship between farmers participation in cotton contract farming and educational levels. It was expected that higher levels of educational attainment by stakeholder, may lead to a better understanding of the contract farming dynamics and, thus, better profit from the use of sound business principles and wise business decisions. The level of formal education will assist farmers to be proactive in production and receptive to new innovations,



which can increase profitability. More so, as the educational level of the farmer increases, the tendency is to increase the participation in contract farming and increase in the benefits of contract farming probably increases their zeal to participate significantly in cotton contract farming. This finding corroborates the finding of Henri-Ukoha *et al.* (2012).

Risks of Cotton Contract Farming According to Contracting Firms

The results on perceived risks of cotton contract farming according to contracting firms and the farmers is presented in Table 5.

Table 5: Risks of cotton contract farming according to contracting firms and farmers

Risks	Frequency	Percentage
Perceived by the firm:		
Sub-standard products from the farmers	31	25.4
Farmers negligence to innovation	23	18.8
Non-profits	10	8.2
Transformation of farming system	14	11.5
Improve standard of living	19	15.6
As a collateral for accessing bank loan	25	20.5
Total	122	100
Perceived by the farmers:		
Poor input delivery	18	14.8
High standard	32	26.2
Highly technical	4	3.3
Exploitation	16	13.1
Long gestation period	11	9.0
Disease outbreak	38	31.2
Poor input delivery/technicality	1	0.8
Technicality/disease outbreak	1	0.8
Exploitation/long gestation period	1	0.8
Total	122	100

Table 5 results reveals that many (25.4%), according to the contracting firm officials said that sub-standard products from the farmers was the most frequently perceived risks. This implies that farmers have not complied with the contract agreements mostly resulting from inadequacy of monitoring, lack of evaluation of promising varieties and hybrids; and inadequate supervision by the contracting firm. As such, it may affect the product marketing, branding and sorting/grading that may not conform to international standards which eventually lead to export challenges. As for the farmers, many (31.2%) said disease outbreak was the main risk they perceives followed by high standards (26.2%) set by the contracting firm. This findings is in conformity with Ajjan (2021) who said the farmer is contracted to plant the contractor's crop on his land; harvest and deliver to the contractor a quantum of produce, based on anticipated yield and contracted acreage. This could be at a pre-agreed price. There should be evaluation of promising varieties and hybrids; multi locational trials and short-listing, selection and sustainable blueprint for agricultural practices after adapting to local conditions, to suit intellectual and financial means of the farmer; and finally, evaluation of farmer economics model and setting up sustainable demonstration farming Ajjan (2021).



CONCLUSION AND RECOMMENDATIONS

The study concluded that cotton contract farming relied expressly on the factors that influenced farmers' participation in contract farming system. These factors among others include market intervention, acquisition of skills, timely inputs and price stability. Also, majority of farmers got the information through Agricultural Development Project (ADP) extension agents that facilitated their participation in contract farming. This study conclude that, there was significant relationship between farmers participation in cotton contract farming and their socio-economic variables such as sex, marital status, highest education level attained, contact with extension agent and the perceived benefits. The following recommendations were made:

1. The firms must ensure regular dissemination of information both vertically and horizontally to the rural dwellers informing them of the comparative advantage in terms of guarantee price in the face of falling world price.
2. Activities of extension agents should be scaled up strongly and sustained by relevant government and contracting firms if contract farming must be popularized. This view as a gateway to create more awareness.
3. Finally, pricing of cotton should reflect quality differentials in products. In other words, the contracting firms and the farmers should promote cotton of the highest grade should attract the highest price instead of exploitation on the side of firms.

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