LIVELIHOOD STATUS OF RICE CONTRACT FARMERS IN BENUE STATE OF NIGERIA

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ABSTRACT

The inability of farmers to access inputs at the right time coupled with high exorbitant prices of farm inputs and incentives has created good atmosphere for the sustainability of contract farming in Nigeria. This study analysed Livelihood Status of Rice Contract Farmers in Benue State of Nigeria. Sample sizes of 137 rice farmers were selected using multi-stage sampling method. Structured questionnaire was used for data collection. Data collected were analyzed using descriptive statistics such as (frequency, percentages and mean), livelihood status index and factor analysis. The findings revealed that 83.9% of contract rice farmers were male with mean age of 45 years. The mean size of farm land under contract farming and farming experience were 1.3 hectares and 25.5 years respectively. The most perceived benefits accruable from contract farming were contract farming help farmers in diversification of agricultural enterprise ($\bar{X}$ =4.92) and also improved farmers well-being/livelihood status ($\bar{X}$ =4.88). Further findings showed that majority of the respondents 79.6% had highly improved livelihood status. The major constraints faced by rice farmers were unforeseen future problem (0.9141), breach of contract by the farmers (0.9038) and delay in payment by the contracting firms (0.9030). It is recommended that more lands should be allocated for contract farming in the study area. Also, contracting firms should speed up the delivery of inputs to rice farmers.

KEYWORDS: Livelihood, Rice, Contract, Farmers

INTRODUCTION

Agriculture has been a source of livelihood for about 70 percent of the population in Sub-Saharan Africa especially those that live in rural areas (Nnadi *et al*., 2012). The involvement of rural populace in agriculture is boosted through access to global export markets which have significantly increase incomes and hence alleviating poverty (Morgado., and Salvucci, 2016). Rice is one of the most widely consumed cereal crops worldwide and third most important cereal grown and consumed globally after wheat and maize. Contract farming is a system where a central processing or exporting unit purchase the harvests of independent farmers with the purchase arranged in advance through contract. The terms of the contract vary and usually specify how much produce the contractor will buy and at what price they will offer for it. The contractor frequently provides credit, inputs and technical advice (Catelo, 2012). The contract is an agreement between a producer (farmer) and the integrator (agribusiness firm) which involves the lending of seeds, fertilizer, pesticides and many other inputs with specific marketing arrangements on price, quality, quantity, delivery requirements and remuneration for work done (Costales and Catelo, 2018; Prowse, 2012 and FAO, 2013). In other words

Minot (2013) views contract farming as an "agricultural production carried out according to a prior agreement in which the farmer commits in producing a given product in a given manner and the buyer commits to purchasing it". Contract farming is the means by which risk is distributed between the out grower who takes the risk of production and the contractor who takes the risks of marketing. Contract farming is aimed at increasing the livelihood status of farmers through the amazing benefits from the contracting firms. The benefits from the firms include inputs and technical advisory services that could be useful for farmers. Contract farming is affected by factors such as poverty, health, political stability, infrastructure, access to markets, and natural hazard (Fasasi, 2017). Other factors that contribute to contract farming in the world include shift to more non-agricultural technology, environmental degradation, insecurity and high population growth (Kelly and Pemberton, 2016). However, improved and systematic organized contract farming is important for global reduction of hunger and poverty, for economic growth and for development of farmers' wellbeing especially in developing countries of the world which include Nigeria (Kagwiria and Gichuki, (2017). Contract farming is a common practice among farmers in Benue

State of Nigeria. The inability of farmers to access inputs at the right time coupled with high exorbitant prices of farm inputs and incentives has created good atmosphere for the sustainability of contract farming in most part of Nigeria where contracting firms assist the poor farmers. Also, lack of access to loan and capital from formal and informal institutions has given the contracting firms upper edge in penetrating the poor farmers. Although contract farming is well pronounced and many farmers have benefitted from it, there is seems to be a knowledge gap regards the contribution of contract farming to the livelihood status of rice farmers. It is on this basis that this research tends to achieve these objectives

  i.   describe the socioeconomic characteristics of contract rice farmers in the study area;
  ii. determine the perceived benefits accruable by the participants in rice contract farming in the study area;
  iii. determine the livelihood Status of rice contract farmers in the study area; and
  iv. identify the constraints associated with farmer's participation in contract farming in the study area

METHODOLOGY
The study was conducted in Benue State of Nigeria. Benue State falls within Longitude 7°47′E to 10°0′E and Latitude 6°25′N, 8°8′N. It is bounded in the North by Nasarawa State and in the East by Taraba and Cross- River States. The State has an estimated land area of 34,059 km^2 and a population of 4, 253,641 (NBS, 2014). The major occupation of the people is farming, the major crops produced include potatoes, cassava, yam, rice, soya beans, sesame, millet and groundnut. Prominent tree crops found in the State include orange and cashew. The total annual rainfall or average rainfall is in the range of 100 – 200mm. The State is made up of undulating plains and hills, with occasional elevations of between 1,500m and 3000m above the sea level. The State is adjudged to be the 'food basket of the nation. About 80% of the State population is directly involved in subsistence agriculture. Multi-stage sampling technique was used to select the respondents for this study. The first stage involved purposive selection of one (1) Local Government Area from each of the 3 agricultural zones making a total number of three (3) LGAs. The purposive selection of these LGAs was due to the high concentration of contract rice farmers. The second stage involved random selection of four (4) villages each from the selected LGAs making a total number of twelve (12) villages. The third stage involved the use of proportional sampling to select 10% of the respondents from the sampling frame.

Table 1: Showing sample distribution of the respondents in the study area

State	Agricultural Zones	LGAs	Villages	Sampling Frame	Sample Size (10%)
Benue State					
	Zone I	Oshongo	Lessel	128	13
			Mbayem	108	11
			Lobi	138	14
			Bee-Agum	102	10
	Zone II	Guma	Gbajimba	98	10
			Makurdi	148	15
			Agasha	78	8
			Dawudu	68	7
	Zone III	Otukpo	Akp-Agede	120	12
			Ogoli	116	12
			Ogobia	100	10
			Adoka	148	15
Sub total	**3**	**3**	**12**	**1352**	**137**

Sources: Benue State Agricultural and Rural Development Authority (2015)

Primary data was used for this study. Data collection was carried out by researchers assisted and by trained enumerators using structure administered questionnaires.
Analytical tools
Objective i and ii were analysed using descriptive statistic such frequency, percentage, mean and count.

Perceived benefits accruable to the participants in contract farming was measured using a 5 point likert rating scale of Strongly Agree (SA) 5; Agree (A) 4; Undecided (U) 3 ;Disagree (D) 2 and Strongly disagree (SD) 1. These were added together that is 5+4+3+2+1 and then divided by 5 to obtain a mean

score of 3.0. Any mean scores $\geq$ 3.0 was considered as agreed, while <3.0 was considered disagreed.

Objective iii was achieved using livelihood index. The livelihood factors (expenditure on non-farm income, expenditure on off-farm activities, sponsoring of wards to school, acquire more household assets, purchase of more vehicles, sponsor of words to school, increase in farm inputs, acquire more wives, payment of medical bills, enhance per calories intake, purchase of fantastic dresses) was achieved using livelihood status index.

Where:

$$LSI = \frac{\text{Number of livelihood benefited by ith respondent}}{\text{Total number of livelihood benefits}}$$

Y = livelihood status index (LSI)

The categorization is stated below:

$\leq$ 0.25 = very poor livelihood

0.26-0.49 = Poor livelihood

0.50-0.75 = Improved livelihood

> 0.76 = High improved livelihood. The index was adopted from Mohammed *et al*. (2020)

Factor Analysis

Factor analysis procedure using factors with varimax rotation was used to achieve objective iv. The constraints were grouped using principal component analysis with iteration and varimax rotation method developed by Kaiser 1958. The cut-off point constraint loading is within the range of 0.3-0.5, variables that load in more than one constraint will be discarded. The Model is presented in equation…… (1)

$Y_1 = a_{11}X_1 + a_{12}X_2 + **********+a_{1n}X_n$

$Y_2 = a_{21}X_1 + a_{22}X_2 + **********+a_{2n}X_n$

$Y_3 = a_{31}X_1 + a_{32}X_2 + **********+a_{3n}X_n$

*

$Y_n = a_{n1}X_1 + a_{n2}X_2 + **********+a_{nm}X_n$

Where;

Y_1, Y_2 ………… Y_2 =Observed variable/ constraints to linkage / practice

a1-an =Constraints to correlation coefficients;

X_1, X_2, ………X_n = Unobserved underlying factors constraining linkage practice

RESULTS AND DISCUSSIONS
Socioeconomic characteristics of contract farmers

Results in Table 2 indicated that majority of the contract farmers (83.9%) were males. This might be attributed to the fact that majority of contracting firms preferred distributing inputs to men than women because men might to not likely to bridge contract agreement unlike women. This finding agreed with that of Obasi (2014) who stated that larger proportion of cassava-based contract farmers in South Eastern of Nigeria were male. Entries in Table 2 showed that the mean age of the contract farmers in Benue State was 45 years. This implies that contract farmers were still in their active and productive where innovative ideas and improved farming practices capable of improving their livelihood status are adopted. The finding concurs with that of Akanbi *et al.* (2019 who reported that a mean age of 41.8 years among small scale rice contract farmers in Kwara State. Result in Table 2 revealed that 86.9% of the contract farmers in were married indicating family responsibilities that will influence rice farmers' participation in contract farming in order to enhance rice farmers livelihood status. This finding is in consonance with that of Namso and Gabriel (2015) who opined that majority of contract fishermen in Akwa-Ibom State, Nigeria were married. Table 2 indicated that the mean size of farm land allotted for contract farming was 1.29 hectares, implying that the most of the respondents allocated small portion of their farm land for contract farming. Small farm land might be attributed to less support and capacity of contracting firms. This corresponds with the findings of Mustapha *et al.* (2012) who found that small farm size could impedes farmers from adopting innovations. Likewise, Osanyinlusi *et al.* (2016) found out in majority of the rice farmers in Ekiti State, Nigeria are small scale farmers. Results in Table 2 indicated that the mean farming experience of the contract farmers in Benue State was 25.5 years. This finding showed that rice farmers in the study area are well experienced in rice production and might have acquired practical knowledge over the years that would enhance their livelihood status. The finding further concur with that of Adebisi *et al.* (2020) who reported that majority of farmers in Osun State, Nigeria had improved experience in framing.

Table 2: Distribution of respondents according to socioeconomic characteristics (n=137)

Variables	Frequecy	(%)
Sex		
Male	115	(83.9)
Female	22	(16.1)
Age		
<30	15	(10.95)
31-40	20	(14.60)
41-50	75	(54.74)
51-60	27	(19.71)
Mean	**45**	
Marital status		
Married	119	(86.9)
Single	13	(9.5)
Divorced	0	0
Widow	5	(3.7)
Size of farm land under contract farming		
<1.0	40	(29.2)
1.1-2.0	63	(45.9)
2.1-3.0	33	(24.1)
>3.0	1	(0.7)
Mean	**1.29**	
Farming Experience		
1-10	8	(5.84)
11-20	31	(22.63)
21-39	74	(54.01)
31-40	23	(16.79)
>40	1	(0.73)
Mean	**25.5**	

Source: Field survey, 2020

Perception of rice farmers on contract farming

The results in Table 3 revealed that respondents agreed with the following benefits of contract farming; helps farmers in diversification of agricultural enterprise ($\bar{X}$ =4.92), improved farmers well-being/livelihood status ($\bar{X}$ =4.88), increase farmers access to training on new farming techniques ($\bar{X}$ =4.87), increases income ($\bar{X}$ =4.87). This implies that part participation in contract farming improves farmers' income. However, increase in income of contract farmers is expected to enhance their livelihood and wellbeing status. This finding agreed with Ogunleye and Ojedokun (2014) who reported that improved income was one of the benefits of participating in contract farming in Oyo State of Nigeria. Also, respondents agreed that contract farming enhance food security ($\bar{X}$ =4.85). This finding is in line with Ogunleye and Ojedokun (2014) who reported a significant increase in food security status of farmers after participating in contract

farming in Oyo State of Nigeria contract farming improved farmers technical competence ($\bar{X}$ =4.82), contract farming promote unity among community members ($\bar{X}$ =4.80), contract farming expose participant to outside farming communities ($\bar{X}$ =4.80), contract farming increase farmers assets acquisition capability ($\bar{X}$ =4.78), contract farming assist farmers to farm inputs ($\bar{X}$ =4.77), it enhances access market information ($\bar{X}$ =4.77). Contract farming often enable farmers to access change in market information that through contract firm that will benefit the rice farmers. Adequate access to market information will grant rice farmers knowledge to change in price, market availability and suitable market for rice business that will positively affect their livelihood and wellbeing status. This finding is concur with that of Idrisu *et al.* (2012) who reported adequate market information among farmers in Kogi State of Nigeria.

Table 3: Perceived benefits accruable to the participants in rice contract farming (n=137)

Variables	Mean($\bar{x}$)	Ranking	Decision
Contract farming help farmers in diversification of agricultural enterprise	4.92	1st	Agreed
Improve farmers well-being/livelihood status	4.88	2nd	Agreed
Enhance participant adequate training on contract farming techniques	4.87	3rd	Agreed
Increase respondents to income	4.86	4th	Agreed
Enhances food security	4.85	5th	Agreed
Improved farmers technical competence	4.82	6th	Agreed
Promotes unity among community members	4.80	8th	Agreed
Exposes participant to outside farming communities	4.80	8th	Agreed
Increases farmers assets acquisition capability	4.78	10th	Agreed
Assists farmers to farm inputs	4.77	11th	Agreed
It enhances access market information	4.77	11th	Agreed

Sources: Field survey, 2020

Livelihood Status of rice farmers

The results in Table 4 showed that the distribution of livelihood status of contract rice farmers in the study area. The finding in revealed that 79.6% of the respondents had highly improved livelihood status. This implies that rice farmers enjoyed better livelihood status in the study area. This might be attributed to more participation in contract farming. It is expected that participation in contract farming would create better atmosphere for accessing incentives that would positively affect their livelihood status and living standard. This finding is in consonance with Ifeanyi-obi and Mathews-Njoku (2014) who reported that majorities of farmers in South East of Nigeria had high livelihoods. This finding contradicted that of Mohammed *et al.* (2020) who confirmed that larger proportion of rural farming populace in Niger State of Nigeria had moderate livelihood.

Table 4: Distribution of respondents according to livelihood status (n=137)

Variables	Frequency	Percentage
Very poor livelihood	0	0
Poor livelihood	7	5.1
Improved livelihood	21	15.3
Highlyimproved livelihood	109	79.6
Total	137	100

Sources: Field survey, 2020

Constraints Associated with Farmer's Participation in Contract Farming

The result of factor analysis in Table 5 indicated the constraints associated with farmer's participation in contract farming in the study area. The result of the Kaiser-Meyer-Olkin (KMO) test which measures the degree of inter-correlation among the variables and the appropriateness of factor analysis has a calibration value of 0.807, implying that the inter-correlation and appropriateness of variables were good for factor analysis (Williams *et al.,* 2010). Bartlett's test which tests the statistical probability of whether the correlation matrix correlates with variables was an identity matrix (at the level of 0.000) indicating a significant relationship between the variables. The result of the principal component analysis using the varimax rotation method isolated 2 underlining or principal factors for each of the 17 constraints associated with farmer's participation in contract farming in the study area. These underlying factors explained 89.9% of the variation in the data. That is to say that the factors that meet the cut-off criterion with Eigen-values greater than 1 are generally considered satisfactory. The extracted factors and their respective factor loadings exclude those whose absolute loading value was less than 0.40 according to Kaiser's rule of thumb (Usman *et al.,* 2021).

Economic/institutional factors

Entries in Table 5 showed that the first factor was loaded very high with an Eigen-value of 17.52050 and 78.7% variance of the militating factors. This factor includes; unforeseen future problem (0.9141). The unforeseen instances such as flood, cattle encroachment, pilfering and low output could causes setback to contract farming system thereby affecting livelihood status of rice farmers. Delay in payment by the contracting firms (0.9030) was another constraint. This can due to non-zealous and non-proactive approaches among contracting firms in ensuring the quick and prompt delivery of incentives and capital to the farmers. Exploitation by the contracting firms (0.8235) is another economic/institutional factor. This implies taking undue advantages of farmers through illegal and wrongful collection before supplying the inputs. Diversion of inputs by contract farmers (0.8261) is another constraint in the study area. This signifies diverting of inputs meant for farmers by the contract firms for economic gain.

Environmental/Social Factors
Result in Table 5 revealed that the second factor was loaded very high with an Eigen-value of 1.40034 and 6.27% variance of the militating factors. These factors includes; manipulation of quota system of donor agencies (0.8912), signifying wrong and illegal supplying of inputs and farming incentives non participants farmers in the study area. Pest and diseases infestation (0.8534) is an environmental factor associated with contract farming. Pest and diseases infection reduces crop output thereby preventing farmers from abiding with the contract agreement with firms. Poor coordination by the contracting firms (0.8439) is a social factor in the study area. This implies lack of proper coordination by contracting firms in ensuring speedy and timely delivery of inputs to farmers. Contract policy problem (0.8395) is another social factor. This signifies non-favourable of policies adopted by contracting firms that negatively affect farmers' livelihood status in the study area. Domination by monopolies (0.8386) is another constraints associated with contract farming in the study area. The monopoly and domineering attitude of most the contracting firms often put farmers at disadvantages and also affect their livelihood status. Corruption among farmers (0.8295) is another social factor. Corruption is common among farmers who felt cheated when terms and conditions of the contract are not favourable. This often forces farmers to sell their produce to available buyers willing to meet their term and conditions. Large number of disperse contract farmers (0.7697) is another social factor in the study area. This denotes scatter nature of farmers that makes distribution of inputs and incentives extremely difficult. Flood (0.7535) is one of the constraints faced by farmers in the study area. The menace of flood which is as a result of excessive rainfall could negatively affect farmer livelihood status. Soil fertility (0.6984) is another constraint associated with contract farming in the study area. Reduction in soil fertility as a result of continuous cropping and other human activities is expected to affect the livelihood status of contract rice farmers.

Table 5: Constraints associated with farmer's participation in contract farming (n=137)

Constraints	Economic/ institutional	Environmental /social
Exploitation by the contracting firms	0.8235	
Impromptu visit by extension agents	0.7752	
Delay in payment by the contracting firms	0.9030	
Unforeseen future problem	0.9141	
Diversion of inputs by contract farmers.	0.8261	
Bridge of contract by the farmers.	0.9038	
Pest and diseases infestation		0.8534
Increase risk		0.6483
Flood		0.7535
Soil fertility		0.6984
Poor coordination by the contracting firms.		0.8439
Unsuitable technology and crop incompatibility		0.8815
Corruption among farmers		0.8295
Manipulation of quotas system of donor agencies		0.8912
Contract policy problem.		0.8395
Domination by monopolies		0.8386
Large number of disperse contract farmers.		0.7697
Chi2 (χ^2	6802.22	
Eigen-value	17.52050	1.40034
% of variance	78.7	6.29
Kaiser-Meyer-Olkin Test	0.807	
Bartlett's Test of Sphericity (χ^2	6749.282	

Sources: Field survey, 2020

CONCLUSION AND RECOMMENDATIONS
Based on this finding it can be concluded that majority of contract farmers are male in their active age with small farm size. Also, contract farming help farmers in diversification of agricultural enterprise and also improved farmers' well-being/livelihood status. Moreover, majority of the rice contract farmers had highly enhanced livelihood status. The major constraints faced by farmers in the study area were unprecedented emergent of problematic needs, bridge

of contract by the farmers and delay in payment by the contracting firms. It is recommended that more land should be allocated for contract farming in the study area. Also, rice should be assisted with more inputs by the contracting firm in order to enhance their output level. Contracting firms should speed up the delivery of inputs in the study area. Finally, contracting firms should avoid exploitation of farmers in the study area.

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