Journal of Agriculture, Environmental Resources and Management
ISSN2245-1800(paper) ISSN 2245-2943(online)
6(6)1-800:**November.**.2024: pp45-48

www.saerem.com

Contract Farming and Rice Production in Benue State, Nigeria: An Examination of the Benefits, Challenges, and Sustainability

[1]Yisa, K, M., [2]Mbube, B. H., [3]Kolo, P. N., [4]Silas, Y. G. & [5]Kumbet, A.

Federal College of Land Resources Technology, Kuru, Jos; hopemnube@gmail.com

ABSTRACT

This study examines the benefits and challenges of rice contract farming in Benue State, Nigeria. The research investigates the level of participation in contract farming, identifies the benefits derived from it, and analyzes the constraints faced by participants. A sample of 137 rice farmers was selected using a multi-stage sampling method, and data were collected through structured questionnaires. Descriptive statistics, including frequency, percentages, and mean, were employed to analyze the data. The findings indicate a high level of participation among rice farmers in fertilizer application ($\bar{x}$=2.99), land preparation ($\bar{x}$=2.92), herbicide use ($\bar{x}$=2.89), and planting according to specifications ($\bar{x}$=2.89). Contract farming facilitates diversification of agricultural enterprises ($\bar{x}$=4.92), improves their well-being and livelihood status ($\bar{x}$=4.88), and enhances training on contract farming techniques ($\bar{x}$=4.87). However, the study identifies exploitation by contracting firms (94.9%), flooding (93.4%), and corruption among farmers (88.3%) as significant constraints. To address these challenges, the study recommends that contracting firms adhere to contract agreements and eliminate exploitative practices. Furthermore, government and national control agencies should implement measures to prevent flooding and promote sorting, grading, packaging, and processing of rice in the study area.

Keywords: Benefits, Participants, Contract, Farming, Sustainability.

Introduction: Rice is the world's third most important cereal crop, after wheat and maize, and serves as a staple food for over half of the global population (Food and Agricultural Organization [FAO], 2020). In Nigeria, rice production has been enhanced through improved varieties facilitated by contract farming, leading to increased output, improved livelihoods, and better well-being of farming families (Adeshina, 2012). Furthermore, the Nigerian government's initiatives, along with private sector involvement, have played a crucial role in bolstering rice production. The Nigerian government's initiatives and private sector involvement have bolstered rice production through investments in research and development, introducing high-yield, drought-resistant rice varieties (Adeoti, Oyedokun and Olajide, 2020). This strategic focus has not only addressed food security concerns but has also empowered local farmers by providing them with the tools and knowledge required to enhance their agricultural practices (Ojo, 2019). In addition to improvements in breeding and cultivation techniques, access to modern farming equipment and better irrigation systems has further contributed to the sustainability of rice farming in Nigeria (Yusuf, 2021). These advancements have enabled farmers to manage their resources effectively, thereby minimizing post-harvest losses and maximizing profit margins. The social and economic implications of these advancements are profound, as enhanced rice productivity has stimulated local economies, created job opportunities, and contributed to rural development (Adeleke, 2020)

As Nigeria strives for self-sufficiency in rice production, collaboration between government agencies, non-governmental organizations, and research institutions remains paramount. This collective effort will ensure that the challenges faced by rice farmers such as market access, credit facilities, and climate change are addressed comprehensively, securing a sustainable future for rice cultivation in the country (Okuneye, 2022). Despite these gains, smallholder farmers in Nigeria face numerous challenges, including limited financial resources, poor infrastructure, inadequate market information, and restricted access to technical advisory services and subsidized agricultural inputs (World Bank, 2018). Contract farming has emerged as a vital strategy to improve agricultural performance in developing countries, aiming to eradicate poverty and promote rural development (Setboonsarng, 2018).

This agricultural production and marketing arrangement involves a pre-season agreement between farmers and purchasers, specifying quantity, quality, delivery date, and price or price formula (Setboonsarng, 2018). Contract farming typically encompasses input provision, technical guidance, and marketing arrangements, fostering partnerships between producers and agribusiness firms (Costales and Castelo, 2018; Prowse, 2012; FAO, 2013).

However, smallholder rice farmers in Benue State, Nigeria, continue to face significant challenges in accessing markets, improving productivity, and enhancing their livelihoods. The lack of empirical evidence on the benefits and challenges of contract

farming in Benue State hinders the development of effective policies and interventions to support smallholder rice farmers. Several factors influence the effectiveness of contract farming, including poverty, health, political stability, infrastructure, market access, and natural hazards (Kelly and Pemberton, 2016). Additional factors contributing to the complexity of contract farming include technological shifts, environmental degradation, insecurity, and rapid population growth (International Fund for Agricultural Development [IFAD], 2020). The adoption of contract farming as a strategy to improve the livelihoods of smallholder rice farmers in Benue State, Nigeria, is faced with uncertainty due to limited information on its benefits and challenges. This knowledge gap hinders the ability of stakeholders to develop effective policies and interventions to support smallholder rice farmers, thereby limiting their potential to improve their livelihoods. Research objectives:; assess the level of participation in contract farming among rice farmers,; investigate the benefits derived from rice contract farming, and ; identify the constraints associated with rice contract farming

Methodology: This study was conducted in Benue State, Nigeria, situated within Longitude 7°47′E to 10°0′E and Latitude 6°25′N, 8°8′N. Benue State spans approximately 34,059 km², with a population of 4,253,641 (NBS, 2014). The region's annual rainfall averages 100-200 mm, supporting subsistence agriculture for about 80% of the population. A multi-stage sampling technique was used for this study. The first stage involved the purposive selection of three (3) Agricultural zones due to the prevalence of contract farming in the state. The second stage involved the purposive selection of one (1) Local Government Area (LGA) from each of the zones, making a total of three (3) LGAs. The third stage involved the random selection of four (4) villages from each of the selected LGAs, making a total of twelve (12) villages. The fourth stage involved the use of a 10% proportionate sampling technique to select 10% of the respondents from the sampling frame. A total of 137 rice farmers were selected as respondents for the study. Primary data was collected using structured questionnaires and interview schedules administered by researchers and trained enumerators. Descriptive statistics, including frequency, percentage, and mean, were used to analyze the data. Level of participation in contract farming was measured using a Likert scale, with mean values greater than or equal to 2 indicating high participation and less than 2 indicating low participation. Perceived benefits from contract rice farming were also assessed using a Likert scale, with mean values greater than 3 indicating agreement and less than or equal to 3 indicating disagreement.

Results and Discussions

Table 1: Level of Participation of Rice Farmers in Contract farming (n=137)

Level of participation	Mean($\bar{x}$)	Decision	Ranking
Land preparation	2.92	High	3rd
Certification on land preparation	2.77	High	7th
Planting according to specification	2.89	High	4th
Monitoring of planting population extension agent	2.76	High	8th
Use of herbicide in contracting farming	2.89	High	4th
Application of fertilizer	2.99	High	1st
Construction of contour line	1.57	Low	11th
Regulation of water	1.29	Low	15th
Harvesting	2.94	High	2nd
Bagging	2.87	High	6th
Transportation	2.28	High	9th
Sorting	1.53	Low	14th
Grading	1.54	Low	13th
Packaging	1.61	Low	10th
Processing	1.57	Low	11th

Sources: Field Survey, 2023 Mean ($\bar{x}$)≥2 = High level of participation

Mean ($\bar{x}$) <2 = High level of participation

The Result presented in Table 1 shows that rice farmers in Benue State had a high level of participation in various contract farming activities. The top-ranked activities included fertilizer application ($\bar{x}$ = 2.99), land preparation ($\bar{x}$ = 2.92), herbicide use ($\bar{x}$ = 2.89), planting according to specifications ($\bar{x}$ = 2.89), bagging ($\bar{x}$ = 2.87), certification on land preparation ($\bar{x}$ = 2.77), and monitoring of planting population by extension agents ($\bar{x}$ = 2.76). Transportation ranked ninth with a mean of 2.28. These findings align with research by Gasarah and Aye (2015), which reported widespread fertilizer application among Benue State farmers. Herbicide application is also crucial for weed control and reducing labour costs, as it is accessible to rice contract farmers and enhances productivity, as noted by Idu et al. (2013). In contrast, rice farmers had low participation levels in packaging ($\bar{x}$ = 1.61), contour construction (mean = 1.57), processing ($\bar{x}$ = 1.57), grading ($\bar{x}$ = 1.54), sorting ($\bar{x}$ = 1.53), and water regulation ($\bar{x}$ = 1.29), ranking 10th to 15th, respectively. The research indicates that rice farmers in Benue State have limited involvement in post-harvest activities. The findings align with Oladele et al. (2017) that Smallholder farmers in Nigeria often lack the technical expertise and financial resources to engage in post-harvest activities, leading to significant losses and reduced profitability. Addressing these barriers is crucial to enhancing the productivity and competitiveness of rice farmers in Benue State.

Table 2: Perceived Benefits of Rice Contract Farming (n=137)

Variables	Mean($\bar{x}$)	Ranking	Decision
Contract farming enhance participant adequate training on contract farming techniques	4.87	3rd	Agreed
Contract farming improve farmers well-being/livelihood status	4.88	2nd	Agreed
Contract farming increase respondents to income	4.86	5th	Agreed
Contract farming help farmers in diversification of agricultural enterprise	4.92	1st	Agreed
Contract farming improved farmers technical competence	4.82	7th	Agreed
Contract farming assist farmers to access farm inputs	4.77	11th	Agreed
It enhances access to market information	4.77	11th	Agreed
Contract farming assist farmers to credit facilities	4.74	15th	Agreed
Contract farming increase farmers assets acquisition capability	4.78	10th	Agreed
Contract farming promote unity among community members	4.80	8th	Agreed
Contract farming expose participant to outside farming communities	4.80	8th	Agreed
Contract farming enhance food security	4.85	6th	Agreed
Contract farming create employment in agrarian societies	4.77	11th	Agreed
Contract farming increase farm inputs	4.77	11th	Agreed
Contract farming increase participant income	4.87	3rd	Agreed

Sources: Field Survey, 2023

The result presented in Table 2 shows that rice farmers strongly agree that contract farming offers numerous benefits. Contract farming helps farmers diversify their agricultural enterprises ($\bar{x}$ = 4.92), improves their livelihood status ($\bar{x}$ = 4.88), provides adequate training on contract farming techniques ($\bar{x}$ = 4.87), and increases income ($\bar{x}$ = 4.87). The findings also show that contract farming also enhances food security ($\bar{x}$ = 4.85), improves technical competence ($\bar{x}$ = 4.82), promotes unity among community members ($\bar{x}$ = 4.80), and increases access to inputs such as fertilizer, improved seeds, and herbicides ($\bar{x}$ = 4.77). These findings align with existing literature, highlighting contract farming's positive impacts on farmers' welfare, productivity, and social cohesion. Contract farming benefits small-scale farmers by enhancing livelihoods, productivity, and social cohesion, which leads to increased income, reduced poverty, and improved food security (Ogunleye & Ojedokun, 2014; FAO, 2013; Costales & Castelo, 2018). Contract farming fosters social cohesion, technical competence, and rural development through collective action, training, and employment generation (Kelly and Pemberton, 2016; Prowse, 2012; Setboonsarng, 2018). These findings suggest that contract farming can improve farmers' income, enhancing their livelihood and well-being.

Table 3: Constraints associated with farmer's participation in contract farming

Variables	Frequency	Percentage	Ranking
Exploitation by the contracting firm	130	94.9	1st
High standard set by contracting firms for the commodity quality specification	109	79.6	7th
Untimely delivery of inputs	124	87.6	4th
Delay in payment by the contracting firms	96	70.1	8th
Pest and diseases infestation	114	83.2	6th
Flood	128	93.4	2nd
Corruption among farmers	121	88.3	3rd
Increase risk of climate change	85	62.0	9th
Bridge of contract by the farmers	72	52.6	10th
Large number of disperse contract farming	117	85.4	5th

Sources: Field Survey, 2023

Table 3 indicates that exploitation by contracting firms (94.9%) is the leading constraint in rice contracting farming, reflecting how farmers are disadvantaged due to inadequate understanding of contract agreements. Flooding (93.4%) ranks second, significantly impacting the livelihoods of rice farmers in Benue State. Additional constraints include corruption among farmers (88.3%), untimely delivery of inputs (87.6%), a large number of dispersed contracts (85.4%), and pest and disease infestations (83.2%), ranked third to sixth, respectively. These findings align with Yisa et al. (2018), highlighting the necessity of tackling exploitation, improving flood management, and strengthening the contract farming system to assist rice farmers in Benue State.

Conclusion : The findings indicate that rice contract farmers actively participated in fertilizer application, harvesting, and land preparation. Farmers reported that contract farming facilitates diversification, increases income, and enhances food security. However, they faced significant challenges, including exploitation by contracting firms, flooding, and corruption. It is recommended that contracting firms adhere to agreements and eliminate exploitation. Additionally, government and regulatory agencies should implement measures to prevent flooding, and efforts should be made to encourage the sorting, grading, packaging, and processing of rice in the area

Recommendations: To tackle the challenges of rice contract farmers, the following measures are recommended to create a fairer and more sustainable contract farming system, ultimately enhancing the livelihoods of rice farmers in Benue State: Contracting firms should adhere to agreements and eliminate exploitative practices.**;** Government and regulatory agencies should implement measures to prevent flooding and mitigate its impacts.**;** Efforts should be made to encourage the sorting, grading, packaging, and processing of rice in the area to enhance value addition.

References

Adeleke, O. (2020). Impact of rice production on rural development in Nigeria. *Journal of Agricultural Extension*, 34(1), 1-10.

Adeoti, A. I., Oyedokun, A. O., & Olajide, O. (2020). Impact of improved rice varieties on farmers' productivity and income in Nigeria. *Journal of Agricultural Science and Technology*, 20(4), 951-964.

Adeshina, A. (2012). Contract farming and rural development in Nigeria. *Journal of Agricultural Extension*, 26(1), 1-12.

Costales, A., & Castelo, M. (2018). Contract farming and its impact on smallholder farmers in developing countries. *Journal of International Development*, 30(5), 761-774.

Food and Agricultural Organization (FAO). (2013). Contract farming: Partnerships for growth. Rome: FAO.

Food and Agricultural Organization (FAO). (2020). The state of food security and nutrition in the world. Rome: FAO.

Gasarah, A. Z., & Aye, G. M. (2015). Assessment of fertilizer application practices among rice farmers in Benue State, Nigeria. *Journal of Agricultural Extension*, 19(2), 123-135.

Idu, E. O., Ogbodo, J. N., & Abel, S. O. (2013). Effect of herbicide application on weed control and yield of rice in Niger Delta, Nigeria. *Journal of Weed Science*, 11(1), 1-9.

International Fund for Agricultural Development (IFAD). (2020). The effects of COVID-19 on rural livelihoods and food systems in Africa.

Kelly, V., & Pemberton, A. (2016). Contract farming and smallholder farmers in Africa. *Journal of African Development*, 18(1), 1-18.

Kelly, V., & Pemberton, A. (2016). Contract farming and smallholder farmers in Africa. Journal of African Development, 18(1), 1-18.

Ogunleye, W. O., & Ojedokun, I. K. (2014). Contract farming and rural development in Nigeria. Journal of Agricultural Extension, 28(1), 1-12.

Ojo, S. O. (2019). Impact of agricultural extension services on rice farmers' productivity in Nigeria. *Journal of Agricultural Extension*, 33(1), 1-10.

Okuneye, P. A. (2022). Rice production in Nigeria: Challenges and prospects. *Journal of Agricultural Extension*, 36(1), 1-12.

Oladele, O. I., Oladejo, J. A., & Ogunwale, A. B. (2017). Post-harvest losses and technical efficiency of smallholder maize farmers in Nigeria. *Journal of Agricultural Science*, 15(2), 257-269.

Prowse, M. (2012). Contract farming in developing countries: A review. *Journal of Development Studies*, 48(10), 1516-1528.

Setboonsarng, S. (2018). Contract farming and its impact on smallholder farmers in Asia. *Journal of Asian Economics*, 55, 1-12.

Setboonsarng, S. (2018). Contract farming and its impact on smallholder farmers in Asia. *Journal of Asian Economics*, 55, 1-12.

World Bank. (2018). Nigeria: Agricultural sector review. Washington, D.C.: World Bank.

Yisa, J., Ogunjimi, S. O., & Akintayo, O. A. (2018). Analysis of livelihood status of rice contract farmers in Benue State, Nigeria. *FUDMA Journal of Agriculture and Agricultural Technology*, 3(1), 127-136.

Yusuf, S. A. (2021). Impact of modern farming technologies on rice production in Nigeria. *Journal of Agricultural Technology*, 17(2), 1-10.