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# Comparative Analysis of the Income of Contract and Non-Contract Tomato Farmers in Ankpa Local Government Area of Kogi State, Nigeria

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**ABSTRACT**

*This study examined effect of contract farming on the income of Tomato farmers in Ankpa Local Government Area of Kogi State. Multistage sampling technique was used to collect sample of 150 tomato farmers (75 farmers for each of contract and non-contract farmers). Primary data used for the study were collected using a structured questionnaire administered to the respondents. Data were analysed using Descriptive Statistics, T-test of Mean Difference and Gross Margin Analysis. Results showed that majority (74.67%) of the respondents were males. Average age was 33 years. About 47% of the respondents were married. Average household size was 9 persons. Average farming experience and farm size were 11 years and 5 hectares respectively. The Gross Margin of contract farmers was ₦375, 174 while that of non-contract farmers was ₦303, 950. The mean income of contract farmers was ₦5, 120 while that of non-contract farmers was ₦3, 350. The probability value of t (0.000) being less than 0.05 alpha level showed that there was a significant difference between the income of contract and non-contract tomato farmers. It was discovered that contract farmers earned more income than non-contract farmers. Non-contract tomato farmers should venture into contract farming so as to benefit from the contracting individuals or firms who supply farm input to contract tomato farmers.*

## INTRODUCTION

Nigeria was self-sufficient in food production and was an exporter of food before the discovery of crude oil in the early 1970s (Olugbire *et al.,* 2021). The subsequent rising revenue accruing from the nation's petroleum sector brought dramatic changes affecting food production and supply (Adesina, 2015). This provided platform for the neglect of agricultural sector, which eventually turned Nigeria into a net importer of food (Adesina, 2015). Attempts, such as market reform have been made to improve food production. This allows for the expansion of contract farming, by which agro-enterprises contract farmers to supply specified agricultural produce and sometimes, the agro-enterprises provide some supports to the farmers such as; advisory services, supply of farming inputs on credit and ready market (Barrett, Bachke, Bellemare, Michelson, Narayanan, & Walker, 2012). Contract Farming is an agreement between farmers, processing and/or marketing firms to produce and supply specified crops under forward agreement mostly at pre-determined prices (Eaton & Shepherd, 2011). Food policy makers consider contract farming as a solution to constraints that limit the productivity and income of small scale farmers in Nigeria. Such constraints include lack of credit, limited information about production methods, market risk, and poor market

linkages. In this view, contract farming can help farmers grow from subsistence production of tomatoes to commercial production scale. Transforming agriculture from smallholding to commercial level involves intermediate expansion of agribusiness sector, linking agriculture and the manufacturing sectors (Prowse, 2012). The economic indicator that is perhaps the most responsible for such agro-industrial sector is contract farming. It is indispensable in modern agriculture whereby processing firms contract the production of 'priority' crop(s) to smallholder farmers (Du, Lu & Zilberman, 2013). According to Will (2013), contract farming is regarded as a forward agreement specifying the obligations of farmers and buyers as partners in business, specifying farmers' (sellers') legal obligation to supply the volumes and qualities as specified, and the buyers' (processors'/traders') obligation to off-take the goods and make the payments as agreed and buyers providing embedded services such as upfront delivery of inputs, pre-financing of input, delivery on credit and other non-financial services (e.g. extension, training, transport and logistics). Tomato farming generates profits for farmers, thus improving their standards of living. It also helps to create job opportunities in agriculture and agro-allied sectors thereby boosting the overall economy of Nigeria. This provides stimulus for agricultural innovation, increasing capital for agricultural investment which could result in rural development. As human population increases, food demand grows alongside it. This makes it imperative to find ways of coping with the increasing demand. Since tomato farming focuses on maximizing yields and quality of produce, it is an important step towards attaining global food security. Quite a number of studies have investigated tomato contract farming in Nigeria; Ayandiji, Adeniji and Omidiji (2011) undertook a research on tomato contract farming in Ogun State, Nigeria. Dolapo et al (2022) investigated the Resource Use Efficiency and Profitability Analysis of Tomato Production (Lycopersicum Esculetum Species) in Federal Capital Territory, Nigeria. Gondalia, Zala and Rachana (2017) provided empirical evidence on the Comparative Economics of Contract and Non-contract Farming of Potato in Gujarat. Nwigwe *et al*. (2020) examined the Cost and Returns Analysis for Small-scale Dry Season Tomato Production in Onitsha Agricultural Zone of Anambra State. Also, Iro (2017) provide empirical evidence on contract farming in northern Nigeria: case study of production of tomatoes in which he determined (i) the basis of involvement into tomato Contract Farming (ii) effect of partaking in Contract Farming on transaction cost and (iii) influence of participation in Contract Farming on Output, Earnings and Wellbeing. Sarkar, Rashid and Sarker (2011), researched on Contract Farming in Tomato Seed production in Rangpur District of Bangladesh: a financial analysis in which they examined (i) the contract growers' cost and relative profitability of open pollinated tomato seed production; and (ii) analysed the resource use efficiency in selected open pollinated tomato seed production, among several other studies. None of them provided a clear cut empirical evidence on the mean difference between the income of contract and non-contract tomato farmers, neither was the profitability of contract and non-contract tomato farming compared. Hence it became pertinent to undertake a research in order to close these gaps. Hence, this study was designed to analyse the effect of contract farming on the income of tomato farmers in Ankpa Local Government Area of Kogi State where there is a preponderance of tomato farmers, many of whom produce tomatoes on contract basis. The specific objectives of this study were to: (i) describe the socioeconomic characteristics of tomato farmers in the study area (ii) compare the costs and returns of contract and non-contract tomato farmers in the study area (iii) determine the mean difference between the income of contract and non-contract farmers in the study area.

## METHODOLOGY

This study was carried out in Ankpa Local Government Area of Kogi State located on the A233 high way in the Eastern part of Kogi State. It is located between latitude $7^0$ 15" North and $7^0$ 37" North of the Equator and longitude $7^0$ 30" East and $7^0$ and 37" East of the Meridian (NPC, 2006). The Local Government Area shares boundary with Benue State to the East, Enugu State to the South and Omala Local Government to the North. It has many villages and 18 districts, with an estimated population of three hundred and nine thousand, nine hundred and thirty (309, 930) people and a land mass of two hundred and sixty-two (262) square kilometre (NPC, 2006). It is mainly inhabited by the Igala-speaking ethnic group although other tribes such as Igbo, Hausa, and Yoruba

among others are found in the area. Agriculture constitutes the major occupation of the people. The system of farming is traditionally accomplished using primitive tools such as cutlasses and hoes. About 90% of the working population is engaged in crop production. The soil is fertile and supports a variety of crops ranging from annual to perennial. Crops grown are Tomato, Okra, Yam, Maize, Cassava, Cowpea, Citrus, Oil Palm, Mango, and Cashew. The major livestock are goats and poultry which are reared extensively. Farming is supplemented by other activities which include trading, blacksmithing, basket weaving, tailoring and so on. These supplementary activities are carried out mostly during the dry season by both men and women. Multistage sampling technique was used to select the respondents. In the first stage, the three (3) major districts were purposively selected. The second stage involved random selection of two (2) communities from Ankpa district, two (2) communities from Ojoku district and four (4) communities from Enjema district based on the prevalence of tomato farmers in those areas. The third stage involved the use of proportional sampling technique to select 10% of the respondents from the sampling frame, making one hundred and fifty (150) respondents used for the study as presented in table 1. These 150 respondents were segmented into two groups; 75 contract farmers and 75 non-contract farmers. Primary data were used for the study. Data were collected using a structured questionnaire and personal interview method.

**Table 1: Sample Distribution of the Respondents in the Study Area**

| S/N | Districts | Communities | Sampling Frame | Sample Size (10%) |
|---|---|---|---|---|
| 1. | Ankpa | Ikanekpo | 80 | 8 |
| | | Ogodo | 40 | 4 |
| 2. | Enjema | Inye | 800 | 80 |
| | | Ofugo | 100 | 10 |
| | | Agbeneba | 90 | 9 |
| | | Enelie | 300 | 30 |
| 3. | Ojoku | Ochunobi | 30 | 3 |
| | | Ojoku | 60 | 6 |
| | **Total** | | 1,**500** | **150** |

Source: Field Survey, 2022.

The socio-economic characteristics of the respondents were described using Descriptive Statistics, the mean difference of the contract and non-contract farmers' income was analysed using T-test. Gross Margin Analysis was used to analyse profitability of contract and non-contract tomato farming.

**Model Specification**

T test:

Data on farmers' income was gotten from farmers' responses to their annual income in the questionnaire. Following Gondalia et al (2017), in their paper titled: Comparative Economics of Contract and Non-contract Farming of Potato in Gujarat, who deployed "t" test for measuring the statistical significance of the difference between two means of contract and non-contract farms for various economic characters. The t test formula for calculating the mean difference of the income of contract and non-contract tomato farmers is as follows:

$$t = \frac{\bar{x}_1 - \bar{x}_2}{\sqrt{\left(s^2\left(\frac{1}{n_1}+\frac{1}{n_2}\right)\right)}}$$

Where: t = t-value

$X_1$= mean of contract farmers' income

$X_2$ = mean of non-contract farmers' income

s = is the standard error of the groups

$n_1$ = number of observation (contract farmers)

$n_2$ = number of observations (non-contract farmers)

Gross Margin Analysis (GMA)

Gross Margin Analysis is a farm management tool used to ascertain the financial performance of a farm. This was adopted in this study following Dolapo *et al.* (2022) who applied Gross Margin Analysis in their paper "Resource Use Efficiency and Profitability Analysis of Tomato Production in Federal Capital Territory, Nigeria". Nwigwe *et al*. (2020) also deployed Gross Margin Analysis to examine Cost and Returns Analysis for Small-scale Dry Season Tomato Production in Onitsha Agricultural Zone of Anambra state. It is represented mathematically as follows:

GM = TR- TVC

Where: GM = Gross Margin (₦)

TR = Total Revenue (₦)

TVC = Total Variable Cost (₦)

## RESULTS AND DISCUSSION

### The Socio-economic Characteristics of Tomato Farmers

The socio-economics characteristics of farmers considered in this study were; Sex, Age, Educational Level, Marital Status, Household Size, Farming Experience and Farm Size. The result of the socio-economic characteristics of the respondents is presented in Table 2. It shows that majority (74.67%) of the respondents were male, which implies that majority of the tomato farmers in the study area were male. The male dominance may be due to the drudgery associated with farming in the rural areas which female folks cannot withstand. This agrees with the findings of Obasi (2014) who found that high proportion of cassava contract farmers in South Eastern Nigeria were male. Also, Egwemi et al (2023) reported that majority of rural farmers in Kogi State are male. The average age of the farmers was 33 years, implying that the farmers are young and energetic to do farm work. This is similar to the finding of Adebayo (2018), who found that the mean age of farmers in Kogi State was about 36 years, suggesting that majority of the farmers were young and active to carry out farm operations. Also, most (46.67%) of the respondents had secondary education. It is generally believed that education builds a mental attitude for getting innovative practices, particularly information and management practices. Thus, more educated farmers have higher likelihood of participating in contract farming as they are in position to acknowledge the benefits of adopting innovations. According to Beard (2015) exceptionally educated household heads are likely to participate in contract farming. This finding disagrees with Iro (2017) who found that a larger proportion (54.3%) of the contract farmers and (50%) of non-contract farmers in Northern Nigeria had no formal education. Also, Ayandiji, Adeniji and Omidiji (2012) reported that 57% of the tomato farmers in Ogun State Nigeria had no formal education. The results also show that most (46.67%) of the respondents were married. It implies that most tomato farmers in the study area were married and since farming is the primary occupation to most of them, they use the household members as source of labour for carrying out farm work. This is similar to the finding of Ifeanyi, Lemchi, Igwilo and Ekpa, (2014) who found that 88% of the farmers in Dekina Local Government were married. The average household size of tomato farmers

in the study area was 9 persons, which implies a large household size, which could serve as source of labour for farm work. This is in line with the finding of Ifeanyi, Lemchi, Igwilo and Ekpa (2014) who concluded from their findings that the mean size of households in Dekina Local Government area of Kogi State was 10 persons. They inferred that it was a large household size which could serve as an alternative source of farm labour thereby saving the cost of hiring labour. Orisakwe and Agomuo (2012) inferred that large household is advantageous to farming as labour may be derived from the members. This result also shows that the respondents have average farming experience of 11 years, implying that tomato farmers in the study area have average farming experience of 11 years, which is long enough for them to acquire necessary experience required for improving the quantity and quality of their produce. This result contradicted the findings of Ikenna et al (2020), who found that many of the farmers in Nigeria have an average of less than 10 years of farming experience. Average farm size of the respondents was 5 hectares. This implies that tomato farmers in the study area cultivate a moderately large area of land. This disagrees with the finding of Asogwa, Abu and Ochoche (2014) who found that smallholder farmers in Benue State operate at subsistence level with land holding average of less than 5 hectares.

**Table 2: Socio-economic Characteristics of Respondents**

| Variable | Frequency | Percentage | Avera |
|---|---|---|---|
| **Sex** | | | |
| Male | 112 | 74.67 | |
| Female | 38 | 25.33 | |
| Total | 150 | 100.0 | |
| **Age** | | | |
| 21-30 | 30 | 20.00 | |
| 31-40 | 39 | 26.00 | 33 years |
| 41-50 | 48 | 32.00 | |
| 51-60 | 17 | 11.33 | |
| Total | 150 | 100.0 | |
| **Level of Education** | | | |
| No Formal Education | 20 | 13.33 | |
| Primary Education | 35 | 23.33 | |
| Secondary Education | 70 | 46.67 | |
| Tertiary Education | 25 | 16.67 | |
| Total | 150 | 100.0 | |
| **Marital Status** | | | |
| Single | 44 | 29.33 | |
| Married | 70 | 46.67 | |
| Others | 36 | 24.00 | |
| Total | 150 | 100.0 | |
| **Household Size** | | | |
| 1-4 | 29 | 19.33 | |
| 5-8 | 51 | 34.00 | |
| > 9 | 70 | 46.67 | 9 persons |
| Total | 150 | 100.0 | |

| | | | |
|---|---|---|---|
| **Farming Experience** | 16 | 10.67 | |
| 1-5 | 47 | 32.67 | 11 years |
| 6-10 | 42 | 29.33 | |
| 11-15 | 45 | 26.00 | |
| >20 | 150 | 100.0 | |
| Total | | | |
| **Farm Size (Ha)** | 7 | 4.67 | |
| 1-2 | 45 | 30.00 | |
| 2-3 | 53 | 35.33 | 5 |
| 3-4 | 45 | 30.00 | hectares |
| >4 | 150 | 100.0 | |
| Total | | | |
| **Access to Extension** | 11 | 7.33 | |
| **Service** | 139 | 92.67 | |
| Yes | 150 | 100.0 | |
| No | | | |
| Total | | | |

**Cost and Returns of Contract and Non-contract Tomato Farmers in the Study Area**

The analysis of cost and returns of contract and non-contract tomato farmers per hectare in the study area is presented in Table 3. It shows that the Total Revenue or Gross income which accrued from contract tomato farming was ₦512, 240 per hectare while the Total Variable Costs incurred during production was ₦137, 066 per hectare. The Gross Margin (difference between Total Revenue and Total Variable Cost) is ₦375, 174 per hectare. This positive Gross Margin means that contract tomato farming is a profitable venture in the study area. On the other hand, the Total Revenue that accrued from the non-contract tomato farming per hectare was ₦ 436,112.3 while the Total Variable Cost incurred during production was ₦132, 162.9 per hectare and the Gross Margin from the non-contract farming was ₦303, 950 per hectare. This means that non-contract tomato farming is also profitable in the study area, but the Gross Margin of contract farming (₦375, 174) per hectare was found to be greater than that of non-contract farming (₦303, 950). This corroborates the a priori expectation that 'Contract farming brings to farmers some positive income effect such as increased productivity, established market for the commodity and reduced-price risk since farmers receive assistance from the contracting individual or firms in the form cash or inputs supply ahead of production. This is consistent with the finding of Iro (2017), who reported that participation in contract farming generated positive income effects on the income of contract farmers which enable them to improve their standards of living. Another profitability indicator is the Benefit-Cost ratio, which is the ratio of the Total Revenue (TR) to Total Variable Costs (TVC). In this study the benefit-cost ratio for contract farming was 3.73 while the benefit-cost ratio for non-contract farming was 3.30. These ratios being greater than one, means that both contract and non-contract tomato farming were profitable ventures in the study area, but contract farming is more profitable. Also, operating cost ratio, a metric used to ascertain the overall efficiency of a farm is derived by dividing the Total Variable Cost (TVC) by the Total Revenue (TR). In this case, the operating cost ratio of contract tomato farming is 0.268 while the operating cost ratio of non-contract tomato farming is 0.303, this means both contract and non-contract tomato farmers were able to operate at a minimum cost as they strived to maximize income, but contract farmers with operating cost ratio of 0.268 were more efficient in terms of inputs management than non-contract farmers with operating cost ratio of 0.303. This finding is in line with the findings of Dolapo *et al.* (2022), who found that tomato farming in the Federal Capital Territory, Nigeria is profitable. Also, Nwigwe *et al*. (2020), inferred that dry season tomato production was a profitable venture in Onitsha Agricultural Zone of Anambra State.

**Table 3: Estimate of Costs and Returns of Contract and Non-contract Tomato Farmers**

| Variable costs | Contract farmers Amount (₦) | Non-contract farmers Amount (₦) |
|---|---|---|
| Tomato seeds cost | 2,092.80 | 2,092.80 |
| Seedlings raising cost | 4,679.20 | 4,679.20 |
| Land clearing cost | 9,392.80 | 11,400.00 |
| Cost of fertilizers | 16,545.60 | 16,545.60 |
| Cost of ridging | 9,016.00 | 9,500.70 |
| Transplanting cost | 5,560.80 | 4,650.60 |
| Weeding cost | 7,004.00 | 8,600.00 |
| Agrochemicals cost | 19,040.00 | 21,150.20 |
| Cost of harvesting | 12,848.00 | 8, 150.50 |
| Fruit sorting cost | 3,714.40 | 1,250.90 |
| Packaging cost | 3,468.80 | 3,650.00 |
| Market tax | 13,576.00 | 12,370.40 |
| Cost of loading & offloading | 12,256.00 | 10,250.00 |
| Transportation cost | 17,872.00 | 17,872.00 |
| Total Variable Costs | 137,066.00 | 132,162.9 |
| Total Revenue | 512,240.00 | 436,112.3 |
| Gross Margin | 375,174.00 | 303,950.0 |
| Benefit-Cost Ratio | 3.73 | 3.30 |
| Operating cost Ratio | 0.268 | 0.303 |

Source: Field Survey, 2022

**Mean Difference of Income of Contract and Non-contract Tomato Farmers in the Study Area**

Table 4 shows the mean difference between the income of contract and non-contract tomato farmers in the study area. According to Table 4, the mean income of contract farmers was ₦5, 120 while the mean income of non-contract farmers was ₦3, 350. This means that contract farming has more positive effect on the income of tomato farmers relative to non-contract farming. It also implied that contract farming could bring to farmers some positive income effect such as increased productivity, established market for the commodity and reduced risk of spoilage of the produce. This is consistent with Iro (2017), who reported that participation in contract farming generated positive income effects on the income of contract farmers which enable them to improve their standards of living. The probability of t (0.000) being less than 0.05 alpha level means the null hypothesis that there was no significant difference between the income of contract and non-contract tomato farmers was rejected. Implying that there is significant difference between the income of contract and that of non-contract tomato farmers in the study area. This finding is consistent with that of Gondalia, Zala and Rachana (2017), who found that the net returns of contract farms were significantly higher than non-contract farms, and that the Benefit Cost Ratio was also significantly higher in favour of the contract farms. In nutshell, these results clearly indicated that contract farming in potato was economically more profitable than the traditional non-contract farming (Gondalia, Zala and Rachana, 2017).

**Table 4: t test showing the Difference in Mean of Income of Contract and Non-contract Tomato Farmers**

| Variables | Observation | Mean | Std. Err | Std. Dev. |
|---|---|---|---|---|
| Contract farmers | 75 | 5.12 | .1394455 | 1.207633 |
| Non-contract farmers | 75 | 3.346667 | .1744937 | 1.51116 |
| combined | 150 | 4.233333 | .1329132 | 1.627848 |
| Difference | | 1.773333 | .2233676 | |

t = 7.9391

Ho: mean (diff) = 0 degrees of freedom = 148

Ha: mean (diff) < 0 Ha: mean (diff)! = 0 Ha: mean (diff) > 0

Pr(T < t) = 1.0000 Pr(|T| > |t|) = 0.0000 Pr(T > t) = 0.0000

## CONCLUSION AND RECOMMENDATIONS

This study showed that more males were involved in both contract and non-contract tomato farming in the study area. Majority of the tomato farmers were married and mostly secondary school leavers. The years of farming experience is long enough to boost the confidence of the contracting firms. Both contract and non-contract tomato farming were profitable but the profitability level of contract farming was higher, meaning that farmers will accept to undertake contract farming if given the opportunity since contract farmers earned more income than non-contract farmers. It follows that contract farming brings to farmers some positive income effects inform of increased productivity, established market for the commodity and reduced-price risk. It is recommended that non-contract farmers should venture into contract farming so as to benefit from the contracting individuals or firms who supply farm input to farmers, as well as to have increased income.

## REFERENCES

Adebayo, C.O. (2018). Demand for Formal Credit among Small scale Cassava Farmers in Kogi State, Nigeria: A Double Hurdle Analysis. *Journal of Tropical Agriculture, Food, Environment and Extension, 17*(2), 45-50.

Adesina, A., (2015). Food Security and National Development, www.nigerianobservernews.com/2015/03/food-security-and-national-development, March 10, 2015.

Asogwa, B.C., Abu, O., & Ochoche, G.E. (2014). Analysis of peasant farmers' access to agricultural credit in Benue State, Nigeria. *British Journal of Economics, Management and Trade, 4*(10), 1-15.

Ayandiji, A., Adeniyi, O. R., & Omidiji, D. (2011). Determinant of post-harvest losses among tomato farmers in Imeko-Afon local government area of Ogun state, Nigeria. *Global Journal of Science Frontier Research, 11,* 23-28.

Barrett, C.B., Bachke, M.E., Bellemare, M.F., Michelson, H.C., Narayanan, S., & Walker, T.F. (2012). Smallholder participation in contract farming: Comparative Evidence from five countries. *World Development, 40,* 715-730.

Beard, V.A. (2015). Individual Determinants of Participation in Community Development in Indonesia. *Environment and Planning C: Government Policy, 23,* 21-39.

Dolapo, B.A., Luka, A., Olugbenga, O.A., Victor, O.N., Christiana, A.U., & Oladayo, D.O. (2022). Resource Use Efficiency and Profitability Analysis of Tomato Production (Lycopersicum Esculetum Species) in Federal Capital Territory, Nigeria. *European Journal of Agriculture and Food Sciences, 4,* 1-12.

Du, X., Lu, L. & Zilbermann, D. (2013). The Economics of Contract Farming: A Credit and Investment Perspective, Energy Biosciences Institute, Department of Agricultural and Resource Economics, UC Berkeley, Berkeley, CA 94720.

Eaton, C. and Shepherd, A.W. (2011). Contract farming: partnerships for growth, FAO Agricultural Services Bulletin, No 145.

Egwemi, J.O., Usman, F. R., Akubo, D., Musa, S.O., Eyiobami, B.H., & Abubakar, U.A. (2023). Effect of Long Lasting Insecticide-Treated Net of Roll Back Malaria Programme on Productivity and Income of Farmers in Kogi State. *International Journal of Life Science and Agriculture Research, 2*(5), 80-88.

Gondalia, V.K., Zala, Y.C. and Rachana Kumari Bansal. (2017). Comparative Economics of Contract and Non-contract Farming of Potato in Gujarat. *Economic Affairs, 62*(4), 683-690

Ifeanyi-Obi, C.C., Lemchi, J., Igwilo, M.C., & Ekpa, I.M. (2014). Analysis of Farmers Access to Agricultural Credit in Dekina Local Government Area, Kogi State. VEF Journal of Agriculture, Rural and Community Development, 1(2),

Ikenna, C.U., Zechariahs, B.O., & Cynthia, C.O. (2020). Assessment of Agricultural Credit Sources and Accessibility in Nigeria. *Review of Agricultural and Applied Economics,* XXIII(2), 3-11. DOI: 10.15414/raae.2020.23.02.03-11.

Iro, I.K. (2017). Empirical evidence on contract farming in Northern Nigeria: case study of tomato

Nwigwe, C.A., Meludu, N.T., Okeke, C.C. & Obiekwe, N.J. (2020). Cost and Returns Analysis for Small-scale Dry Season Tomato Production in Onitsha Agricultural Zone of Anambra State. *International Journal of the Science of Food and Agriculture, 4*(2), 129-137.

Obasi, I. (2014). Effect of Contract Farming on Productivity and Welfare of Cassava-Based Farmers in South Eastern Nigeria. *European Journal of Business and Management, 6*(7), 334-339

Olugbire, O.O., Sunmbo, O., & Olarewaju, T. O. (2021). Contribution of Small-Scale Farming and Local Food Supply to Sustainable Production and Food Security in Nigeria–A review. *Journal of Agribusiness and Rural Development, 1*(59), 91-99.

Orisakwe L. & Agomuo F. O. (2012). Adoption of improved agroforestry technology among contract farmers in Imo State, Nigeria. *Asian Journal of Agriculture and Rural Development, 2*(1),

production. *Asian Journal of Agriculture and Rural Development, 6*(12), 240-253.

Prowse, M. (2012). Contract Farming in Developing Countries: A Review. The A Savoir Collection, AFD's Research Department, Pp 1-99. http://researche.afd.fr

Sarkar, M. A. R., Rashid M. H. A. And Sarker, M. R. (2011). Contract Farming in Tomato Seed Production in Rangpur District of Bangladesh: A Financial Analysis. Progress. *Agriculture, 22*(1&2), 169-179.

Will, M. (2013). Contract Farming Handbook: A practical Guide for Linking Small-scale Producers and Buyers through Business Model Innovation, Published by Deutsche Gesellschaft für Internationale Zusa