

EFFECT OF GOVERNMENT SUBSIDIES ON RICE PRODUCTION IN OGBESE, AKURE NORTH LOCAL GOVERNMENT AREA OF ONDO STATE NIGERIA.

¹Oladiran S.S; ¹Omopariola T.P ²Adekanmbi O.M; ²Aboluwarin T.T; and ²Ejiko S.A;

¹Department of Agribusiness Management, Federal College of Agriculture, Ibadan Nigeria

²Department of Agricultural Extension, 1 Federal College of Agriculture, Ibadan Nigeria
author's e-mail/Phone number: foodforthought2000@yahoo.com/08035777674

ABSTRACT

The study investigated the effect of Government subsidies on rice production in Ogbese Akure North Local government area of Ondo state. Data for the study were collected using structured questionnaire administered to 100 respondents who were randomly selected. Data collected were analyzed using descriptive statistics, Cross margin analysis and multiple regression analysis. Results showed that both married men and women were involved in rice production in the study area, even though males dominated Most (52%) of them were still in their productive age range of 31-40 years; and also have one form of education or the other. Furthermore, (44.30%) of the respondents had 6-10years of experience in rice production. The coefficients for fertilizer, herbicides, farm implements and grants were all positive and highly significant at 1% level of probability. The costs and returns analysis revealed that rice production is a very rewarding and profitable enterprise in the area, if well managed. The major problems and challenges confronting them and which have been identified include; Poor access to credit/funds, Poor infrastructural facilities, inadequate processing facilities, Poor and inadequate storage facilities, lack of improved rice varieties, shortage and high cost of labor; among others. It is therefore, recommended that all these constraints limiting the respondents from achieving their vision and mission in rice production be addressed by the Government and the relative agencies in power so as to encourage them to increase their rice production potentials and capabilities.

Keywords: *Government subsidies, Rice production*

INTRODUCTION

Rice (*Oryza Sativa*) is the most important staple food for about half of the human race (Lanceton and Erenstein 2003; National Cereal research Institute, (NCRI, 2004). Rice is one of the major crops cultivated globally, alongside with wheat and corn (RIFAN, 2017), and provides over 19% of global human per capita energy (Tijani and Bakari; 2014). It is grown in more than a hundred countries with estimated total harvested area of 158 million hectares in 2018 growing season with more than 700 million tonnes of milled rice produced annually from wide ranging ecologies (USAD, 2019). Food and Agriculture Organization (FAO) (2019) and Hessu (2020) reported that 78% of global rice production is for human such as animal feed. According to Food and Agricultural Policy Research (FAPR), the global rice demand is expected rise up to 496 million tonnes in 2022, and up to 555 million tonnes in 2035; hence the need to boost production by all and sundries; thereby help in promoting the growth of all important world staple food (Udemezue, 2019).

The demand for rice in Sub-saharan Africa is growing much faster than any other grain, with both rich and the poor relying on it as their major source of calories (Kormawa and Akande, 2011). It has witnessed considerable growing demand, as more consumers move away from local carbohydrate diet such as yam and garri to making rice the staple food. Rice is the third-most consumed staple food in Nigeria (after maize and cassava) and has attained height of a food security crop due to its increased significances in the country (Ume et al 2017). For instance, rice is an essential cash crops for small-scale farmers who commonly sell 80% of total production and consume only 20% (RIFAN, 2017). The current production capacity of the farmers is quiet inadequate to meet the consumption demand of the nation (Bamidele et al, 2010). This inadequacy of the rice harvest to meet consumption demand provide an income enhancing opportunity for the farmers; as well as the unemployed youths to strive for the promotion and cultivation of the crop. However, it is imperative to state that Nigeria has hinged profoundly on imported rice to meet

her consumption needs, and therefore has become one of the world's importers of rice West Africa Rice Development Association (WARDA, 2016).

A case in point, United State Agency for international Development USIAD, (2019) revealed that between 2007- 2018, the Nigeria's rice consumption exceeded domestic production with a yearly average production deficit of about 2.4 million tonnes same vein, total demand between 2007 and 2018. Increased at a rate of 5.3%, while imports increased at rate of 5.24% in the same periods under consideration. In order to, encounter the deficit in the year 2018 alone, Nigeria imported an estimated 3 million tonnes of rice (Udemezue, 2019). In addition, statistics on rice consumption in Nigeria between the years 2011 and 2017 as released by the Central Bank of Nigeria (CBN, 2018), showed that Nigeria had steadily rising consumption of about 5.6 and 6.9 metric tonnes respectively compared to her local production of 2.906 and 3.780 million metric tonnes respectively. The deficit as reported by CBN, were met with import that worth more than \$4 billion. This production predicament is more pathetic; especially when the nation's rice potentials are critically examined. RIFAN,(2017) opined that Nigeria has relative resource benefits in terms of dependable climate, edaphic and ecological conditions for efficient rice production. Tijian and Bakari (2014) reported that Nigeria has improved in high yielding rice varieties that associated with technologies , numerous and productive rice ecologies and lots of programmes and policies by government and non-governmental organizations armed at advancing rice production . Presently, Nigerian rice sub-sector is dominated by weak and inefficient producer-market linkages due to poor infrastructure, including lack of improved processing facilities, low rice productivity, poor post- harvest handling and storage, expensive and poor access to inputs (such as high quality seeds, fertilizer and crop protection products), expensive and poor access to information, lack of transparency among players, low capacity to meet quality standards, and limited efficiency in distribution networks. All these have declined rice productivity and income for rice farmers in Nigeria, especially in Ondo State. It has also resulted to massive lost of manpower through the abandonment of farms and the migration of rural youths to the cities in search of white collar jobs. Therefore, delivering high quality rice farm production in Ondo State, in particular requires government subsidies such as substantial agricultural infrastructure in the form

of farm credit, training, transportation, storage and access to inputs. It is with this knowledge in mind that the study attempts to evaluate the effects of government subsidies on rice production in Ondo state of Nigeria. The main objective of this study is to examine the effect of government subsidies on rice production in Ogbese, Akure North Local Government in Ondo state while the specific objectives of this study are to; (I). estimate the costs and returns of rice production as a result of the subsidies;., (ii). determine the effects of government subsidies on the output of rice; and (iii). Investigate the constraints to obtaining these subsidies on rice production by the respondents.

METHODOLOGY

Description of the Study Area

The study area is Ayede Ogbese along the Akure-Benin expressway in Ondo state. The area lies within latitude E6°SE8° and longitude N4°N6°E. The river has its source from Ayede-Ekiti in Ekiti State and flows through Ogbese in Ondo State to Edo State. The Ogbese community is about 10 km east of Akure, the Ondo State capital. Other towns and villages are: Obaile, Ilu-Abo, Owode, Eleyowo, Igbatoro, Ala, Igoba, Isinigbo, Jegele, O0dudu and Osi. It has a total land area of 676.7km² (Facts & Figures on Ondo State, 2010). Akure - North Local Government is bounded in the North by Ekiti State, in the South by Akure South Local Government, in the East by Akoko South West Local Government and in the West by Ifedore Local Government respectively. According to the National Bureau of Statistics (2006), Akure - North Local Government has a total population of 176,500 people. Their major occupation in the Local Government is farming. The Local Government enjoys a tropical climate with rainy season from April to October and dry season from November to March every year. This climate supports yam production and some other arable crops such as Rice, cassava, maize, cocoyam, and sweet potatoes, they also rear livestock such as goat piggery and poultry. Multi-stage random sampling technique was used in selecting the respondents for the study. Stage (i) involves purposive selection of five (5) communities out of the six (6) communities that make up the study area, based on the preponderance of rice farmers in the communities. .Stage (ii) involves random selection of four (4) villages from each of five (5) communities already selected in stage 1. Stage (iii) involves random selection of five (5) rice farmers from each village; thereby giving a total sample size of one hundred (100)

respondents. Data were collected with the aid of structured questionnaire.

Gross Margin Analysis using budgetary technique. was employed to estimate the profitability of rice production. Gross margin is the difference between the total revenue (TR) and the total variable cost (TVC). It is a useful planning tool in situations where fixed capital is negligible of the farm enterprises, and especially in the case of small scale agriculture (olukosi and Erhabor, (2005). The model is expressed as thus:

$$= TVP = TVC - TFC \dots \dots \text{equation} - (i)$$

$$= \sum^m P_j Q_j - \sum^n P_i X_i - \sum^r P_k C_k \dots \dots \text{equation} (2)$$

Where:

π = Net Farm profit

TVP = Total Value of production (gross output)

TVC = Total Variable cost

TFC = Total fixed cost

Q = Quantity of ith output

P = Unit price of ith variable inputs

X_i = Quality of ith variable inputs ($i=1, 2, 3 \dots \dots n$)

P_i = Unit price of ith variable inputs

n = Number of inputs used in production

zzzm = Number of enterprises

PK = Unit price of kth fixed inputs ($k=1, 2, 3 \dots \dots n$)

CK = Quantity of kth fixed inputs

r = Number of fixed inputs

Also multiple regression was used

RESULT AND DISCUSSION

Table 1 revealed that majority (98%) of the respondents were within the age- bracket of 21-60 years. This means that most of them are still in their active economic years, which portend bumper harvest for the rice farmers. This is in line with the findings of Adewum and Omotosho, (2012), who opined that productivity and output of the famer is affected by age. The same table 1 disclosed that both men and women were involved in rice production, but with men having 52% participation and the women having 48% participation. This result implies that rice farming in the study area is male dominated; and this is consonance with the Chukwu and Umeh, (2015) who stated that males dominated in rice production in Ondo state. The table 1 equally displayed that 77.7% of the married couples were involved in rice production in the area. This indicated that most of the rice farmers in the study area were faced with many responsibilities, which can push them into off-farm activities. Table 1 also revealed that most (72%) of the rice farmers sampled had one form of formal education or the other. Amaechina and Eboh (2017) reported on the ease of educated farmers

in having access to information, which could assist in enhancing their informativeness and in making the good use of the improved technologies packages. The same of table 1 depicted that 94% of the respondents had farm sizes of between 1-3 hectares, 44.3% had between 6-10 years of experience in rice production. 29.70% had 11-15 years, while 14.50% are between 16-20 years of experience. This implies that most of the rice farmers in the study area are well experienced in rice production enterprise.

Table 1: Socio-economic characteristics of respondents

Variable	Frequency	Percentage	Means
Age(Years)			
21-30	14	14.00	30
31-40	45	45.00	
41-50	26	26.00	
51-60	13	13.00	
Greater than >6	2	2.00	
Gender			
Male	52	52.00	
Female	48	48.00	
Marital Status			
Single	12	12.5	
Married	71	77.7	
Widow(widower)	9	5.5	
Divorced(separate)	8	4.3	
Educational Status			
No formal	28	25.5	
Education Primary	37	40.5	
Education	20	21.5	
Secondary Education	15	12.5	
Tertiary Education			
Household size	20	20.0	7
1-4	45	45.0	
5-8	25	25.0	
9-12	10	10.0	
13-16			
Farming experience(year)			
1-5	10	11.50	8
6-10	42	44.30	
11-15	28	29.70	
16-20	20	14.50	
Farm Size(ha)			
0.5-1.0	23	23.00	1.1
1.1-1.5	35	35.00	
1.6-2.0	20	20.00	
2.1-2.5	16	16.00	
2.6-3.0	6	6.00	
Annual Farm Income on rice(#			
50,000-100,000	20	20.00	
150,000-151,000-200,000	36	36.00	
201,000-250,000	10	10.00	
300,000-301,000-350,000	12	12.00	
351,000-400,000	13	13.00	
Source: Field survey, 2025	5	5.00	
	5	5.00	

2: Costs and Returns for Rice Production

The viability of an enterprise is indicated by the amount of profit realized per period of time. Profit is the difference between the monetary value of goods produced and the cost of the resources used in their production. The amount of revenue realized and the operating cost of a business venture determines how much gain or

loss the enterprise can achieve within a certain period. Table 2 show the costs and returns of rice production per hectare of land in the study area. The result showed that an average of ninety (90) bags of milled rice grains were realized per farmer per hectare of land; or a total revenue of N1,800,000.00; with a total cost of production amounting to N476,014.00; thereby giving a net revenue (or net returns) of N 1,332,986 and a benefit-cost-ratation of 3.8 or Returns on investment per naira of 2.78. This implies that for every one naira invested on rice production in the study area; brings a profit of N 2.78; which indicates that rice production enterprise is a very rewarding and lucrative venture in the area. This conforms with the findings of Chukwu and Umeh (2015) who stated that rice production is a profitable enterprise in not just for the study area, but also in the state as a whole.

Table 2: Costs and Returns for Rice Production

Variables	Unit	Quantity	Price/Unit(N)	Total Value(N)
Rice output	Bag	90	70,000	6,300,000.00
(A) Total Revenue				6,300,000.00
Variable Costs:				
(a) Operating input:				
Rice seeds	Bag	20	8,000	160,000
Selective herbicide	Litre	2	1,600	3,200
Non-Selective herbicide	Litre	2	1,600	3,200
Insecticide	Litre	2	2,500	5,000
Fertilizer	Bag	6	6,500	39,000
Empty jute bag	Bag	30	150	4,500
Twine	Roll	2	250	500
Total cost of operating inputs:				215,400.00
(b) Labour input man/day				
Land preparation(including nursery)	Man/day	25	4000	
Planting(including)	Man/day	15	3000	100,000
Transplanting	Man/day	2	3000	45,000
Herbicide application	Man/day	2	3000	6000
Insecticide Application	Man/day	10	3000	30,000
Bird scaring	Man/day	2	2500	5000
Harvesting (including)				
Conveyance	Man/day	20	2000	40,000
Processing (including)				
Parboiling threshing				
Winnowing and Bagging	Man/day	10	2000	20,000
Total Labour Cost:				252,000.00
x467,400 = N98,154 interest rate				

Source: Field survey 2025

$$(B) \text{Total variable cost (TVC)} = (a+b) = 467400 + 98,154 = 565,554$$

$$\text{Gross Margin (GM)} = (A-B) = 6,300,000 - 565,554 = 5,734,446$$

Fixed Cost

$$\text{Rent on land} = 200,000$$

$$\text{Depreciation of fixed Asset (Excluding land)} = 50,000$$

$$\text{Opportunity cost of fixed capital @21\% interest rate} = 21/100 \times 250,000 = 52,500$$

$$(C) \text{Total fixed cost} = 250,000 + 52,500 = 302,500$$

$$(D) \text{Total cost} = (B+C) = 565,554 + 302,500 = 868,054$$

$$(E) \text{Net Returns (NR)} = (A-D) \text{ i.e } 6,300,000 - 868,054 = 5,431,946$$

$$\text{NR} = 5,431,946$$

$$\text{Benefit Cost Ratio (BCR)} = A/D = 6,300,000/868,054 = 7.26$$

$$\text{BCR} = 7.26$$

$$\text{Return on Investment (ROI)} = E/D = 5,431,946/868,054 = 6.26$$

$$\text{ROI} = 6.26$$

Effects of government subsidies on the output of rice

Results of the Multiple Regression Analysis: The multiple regression analysis results are presented in Table 3, and it shows that the double –log functional form emerged as the lead equation based on the economic, statistical and econometric criteria. The coefficients for fertilizer, farm implements, Grants, and herbicides were all positive and highly significant at 1% level of probability. This implies that they all have direct relationship with the output of rice and this is in line with apriori expectations. As expected, the coefficient of fertilizer was positive and statistically significant at 1% risk level. This confirmed to the findings of Onyenweaku *et al.*, (2010) who asserted that fertilizer is an important input factor that greatly influences farmer's outputs. Furthermore, the positive relation between fertilizer usage and yield could be due to the fact that continued application of fertilizer will replenish the lost soil nutrients and thereby provide the needed nutrients for crop growth and development. Hence, judging from the fact that an increase in the application of fertilizer will help to supply the needed nutrients to maximize yield, the positive effect of it is thereby justified. The coefficient of herbicides equally had direct relationship with the dependent variable at 99% confidence interval.

Table3: Results Of Multiple Regression Analysis On The Effects Of Government Subsidies On The Output Of Rice

Variables	Linear	Semi-log	Double-log	Exponential
Constant	199.5493 (4.70)***	198.1719 (3.95)***	7.5471 (8.66)***	120et33 (0.08)
Fertilizer	16.30174 (2.98)***	54.12120 (3.52)***	0.61877 (8.66)***	-1.17et30 (-0.08)
Improved seed varieties	6.764396 (-2.000)**	25.58691 (-1.73) -	0.2133 (0.61)	310et29 (-0.35) -
Farm Implements	28.14563 (6.35)***	86.97651 (-7.46)***	1.54440 (6.00)***	2.92et30 (-0.36)
Grants	6.30817 (-1.54)	14.94094 (1.26)	0.70088 (2.78)***	1.59et30 (0.24) -
Herbicide	0.7651 (1.9812)*	1.0092 (1.0076)*	1.0843 (3.042)***	1.83et27 (-0.000)
R ²	0.4818	0.5111	0.6470	0.0048
F-Ratio	1.0086*	20.07***	35.20***	0.05

Sources: Field survey ,2025

4 Constraints to accessing government subsidies on rice production

The constraints to rice production in this context

imply the problems and the challenges inhibiting rice producers from assessing Government subsidies on rice. Table 4 showed the main constraints highlighted by the rice producers in the study area. The average of each constraint across the rice-growing areas was calculated and presented in the table in ranked order. The major challenges that needed to be addressed in order to make the enterprise more attractive and conducive for the rice farmers is Poor access to credit/fund with a mean score 1.69 is a major constraint to rice production as farmers are poor, they suffer from limited access to credit facilities; thereby hindering higher productivity and output (Izeakor and Olumese, 2010), Hence, lack of adequate provision for agricultural loans from the financial institutions to producers has constrained sustainability of rice cultivation of Nigeria. Shortage and high cost of labour was ranked 6th, its also a major challenge to rice production in the area. Okoye et al, 2010; FAO, 2014; Kadiri et al, 2015; and Ume et al, 2018 reported that the shortage and high cost of labour in most countries insub-Saharan Africa. However, Nigerian situation could be linked to among other things; economic recession as labourers charge exorbitantly to survive and as well as rural-urban migration of able-bodied youths in search of greener pastures; thereby leaving farming to the feeble and the aged parents and their little children.

Table 4: Constraints to Accessing Government Subsidies on Rice Production by Respondents

Constraints	Very severe	Severe	Not severe	Mean	Rank
Inadequate improved rice varieties	83(69.2)	37(30.8)	0(0.0)	1.56	5
Shortage and high cost of Labour	85(70.8)	24(20.0)	11(9.2)	1.54	6
Poor Access to credit /Fund	75(62.5)	40(33.3)	5(4.2)	1.69	1
Pest and disease Infestation	78(65.0)	35(29.2)	7(5.8)	1.42	13
Poor and inadequate storage facilities	73(60.8)	41(34.2)	6(5.0)	1.58	4
Poor market information	65(54.2)	51(42.5)	4(3.3)	1.50	9
Inadequate processing facilities	57(47.5)	56(46.7)	7(5.8)	1.59	3
High interest rate on credit	70(58.3)	44(36.7)	6(5.0)	1.49	10
High cost of land and land	65(54.2)	48(40.0)	6(5.0)	1.48	11
Tenure problem					
Poor access to extension Services	69(57.5)	47(39.2)	3(2.5)	1.53	7
Poor access to market	65(54.2)	50(41.7)	5(4.2)	1.51	8
Poor access to improved Inputs	56(46.7)	61(50.8)	3(2.5)	1.44	12
Poor infrastructural Facilities	64(53.3)	41(34.2)	15(12.5)	1.62	2

Sources: Field survey 2025

Conclusion and Recommendation

Rice production in the area is a very rewarding and lucrative enterprise, as every naira invested in rice production in the area brings a profit of N6.26. The coefficients for grants, improved rice varieties, fertilizers, farm implements and herbicides were all positive and highly significant at 1% probability level. The following recommendation are provided from the study:

1. Government or NGO should provide access to low-interest loans and grants for agricultural

development.

2. Farmer should be allowed to enhance access to reliable energy sources, including renewable energy options to power farms and rural business.

3. Establishment and upgrade storage facilities for crops and livestock products to reduce post harvest losses.

REFERENCES

- Adewumi, M.O. and Omotesho, O.A (2012): An analysis of production objective of small rural farming household in Kwara state Nigeria. *Journal of Rural Development*; 25(Winter):201-211.
- consumption patterns in Nigeria. *Journal of Agriculture, Science and Technology*,
- Babatunde, R.O; Olorunsanya, E.O. and Adejola, A.D (2008): Assessment of rural household poverty : Evidence from South-western, Nigeria. *American-Euroasian Journal of Agriculture and Environmental Science*; 3(6): 900-905.
- Bamidele, F.S; Abayomi, O.O. and Adebisi, E.O. (2010): Economic analysis of rice consumption pattern in Nigeria. *Journal of Agricultural Development*; 10(11):4350-4363. CBN (2018): Central Bank of Nigeria Annual Report and statement of account for the year ended 31st Dec. 2017.
- Chukwu, V.A. and Umeh, G.N. (2015): Adoption differentials and benefits of improved rice production technologies among farmers in Ebonyi state, Nigeria. *Journal of Biology, Agriculture and 5(7):www.iiste.org*
- CARD (2009): Coalition Development.
- Ezeh, Col. And Nwachukwu, 10N. (2010): Micro level impact of National Fadama II project on rural poverty in Imo state, Nigeria. *African Journal of Food, Agriculture, Nutrition and Development*, 10(9): 4016-4031
- FAO (2014): The State of Food and Agriculture: Innovations in family farm. The Food and Agriculture Organization of the United Nations, Rome.
- FAO (2018): FAO statistical year book 2018: World Food and Agriculture. Food and Agriculture Organization of the United Nations, Rome

- Heesu, L. (2020): Food security fears are starting to threaten Asian rice exports. Bloomberg Green magazine; pp22-28
- Izeakor, O.B. and Olumese, M.I. (2011): Determinants of yam production and profitability in Edo state, Nigeria. African Journal of General Agriculture; 6(4): 62-69.
- Kadiri, F.A. Eze, C.C. Orebiyi, J.S and Onyaguocha, U.O (2015): Resource use and allocative efficiency of paddy rice production in Niger Delta Region of Nigeria. Global Journal of Research; 2: 11-18.
- Lancon, F. and Erenstein, O. (2003): Rice processing in Nigeria: A survey of West African Rice Development Association Abidjan, (WARDA), coted Ivoire; pp1-54
- Nwaru, J.C. (2006): Comparative analysis of the mean output of cassava and profits by men and women in cassava production systems in Abia State, Nigeria. The Nigerian Agricultural Okerek, C.O. (2012); challenges of risk management among small-holder rice farmers in Ebonyi State, Nigeria: Implications for national food security. International Journal of Agricultural Economics and Rural Development, 5(1): 20-26.
- Okoye, B.C; Onyenweaku, C.E and Okorie, K.C. (2010): Determinants of fertilizer adoption rate by rice farmers in Bende L.G.A. of Abia State, Nigeria. The Nigerian Agricultural Journal; 41(2): 1-6
- Olukosi, J.O. and Erhabor, P.O (2005): Introduction to Farm Management economics: Principles and Applications. Agilab. Publishers Limited, Zaria. PP48-56.
- Omotoshio, A.O; Adewumi, M; and Fadimula, K.S. (2010): Food security and poverty of rural households in Kwara State, Nigeria. International Journal of Agricultural Research, center; 1(1): 56-59.
- Oyeyinka, R; A and Bolarinwa, K.K. (2009): Using Nigerian Agricultural Cooperatives and Rural Development Bank (NACRDB), small-holder direct loan scheme to increase agricultural production in rural areas of Oyo state, Nigeria. International Journal for Economics and Rural Development; 2(1): 27-31.
- Tijiani, A and Bakari, U. (2014): Determinants of allocative efficiency of rain fed rice production in Taraba State, Nigeria. European science Journal; 10(33) 220-229.
- Udemezue, J.C. (2019): Analysis of rice production and consumption trends in Nigeria. Journal of plant sciences and crop protection; 1(3): 23-38.
- Ume, S.I; Ezeano, C.I. Eluwa, A.N; and Ebe, F (2017): Analysis of technical inefficiency of rice production among farmers in Ezza South L.G.A. of Ebonyi State, Nigeria: Application of stochastic frontier production. Archives of current Research International, 4(3): 261-269.
- Ume, S.I; Ezeano, C.I; Edeh, O; and Udefi, I.O. (2018): Resource-use efficiency of upland rice farmers in IVO L.G.A of Ebonyi State, Nigeria. Asian Research Journal of Arts and social sciences; 7(2): 1-10
- United State Agency for International Development (USAID, 2013) Global Food Security response West Africa Rice Value Chain Analysis; Global Food Security Resource Rice study, Nigeria. Gain Report Bulletin; PP56-62.