



**PROFITABILITY ANALYSIS OF RICE PRODUCTION IN OBI LOCAL
GOVERNMENT AREA, NASARAWA STATE**

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ABSTRACT

The study analyzed the profitability of rice production in Obi Local Government Area, Nasarawa State. Multistage sampling was used to 40 rice farmers. Descriptive analysis tools and Gross Margin analysis were used to achieved the objectives of the study. The findings of the study showed that most (87.5%) of the respondents were in their active years. The result shows that 80% of the respondents were male, 62.5% of the respondents were small scale farmers with farm size between the ranged of 1-2 hectares. The result of the profitability analysis showed that the return per hectare was ₦210,000 and the total cost was ₦66,662.6. The net farm income obtained was ₦143,337.4 and return on investment was ₦3.2. This implies that one naira invested in the rice enterprise could yield up to ₦3.2 naira in returns. The result of the findings revealed that stealing of the products in the farm and pest and diseases outbreak to be the most militating factors against rice production in the study area. In Conclusion findings revealed that rice production was profitable enterprise in the study area. The following recommendations were made based on the findings: Farmers should be provided with adequate credit facilities at a reasonable interest rate in order to enhance rice farmers output that will translate to increase farm family income. Farmers should utilize farm inputs that can increase their profitability level in the study area and Government and non-government organization (NGOS) should enhance extension service so that farmers can have access to latest information on how to utilize inputs.

Keywords: Analysis, Gross, Margin Profitability and Production

INTRODUCTION

Rice is an important food crop and the rice demand is predicted to increase by 40% by 2040 to meet the need of the growing world's population (Saravakumar and Kiruthuka 2015). Apart from being the main stable food for more than half of world population, rice is taken in milk and with addition of sugar in India, cocked pulse, curd, vegetables, fish, and meat. Fermentable product as dorsa, idly, rice plus black gram. Rice flower is used in confectionary, ice creams, puddings and pastry.

Rice stanch food has laundry values and industrial potential in the cosmetic industry as a thickener in calico printing in finish textiles and making dextrin, glucose, adhesives and alcoholic beverages. Rice husk is use as fuel bedding for poultry and for packaging and insulations. Ash from burn rice huts are use as fillers in concrete and burnt bricks and as source of sodium silicate in making soaps, polishes and other cleaning agents. The bran and rice polish by products of rice milling industry are value as a stock fed is use for edible purposes. In china and Japan every fine type of paper is manufactured from rice straw. The straw is also use to feed cattle, soil mulch, fertilizer and making straw board. Others are thatching making mats, halt sacks ropes and baskets It is therefore, important to investigate the inputs used among the farmers and examine the returns in rice production among rice farmers in the study area. Also, assessment of the input use in rice



production is important since major problem in the country rice cultivation still revolves around low productivity which is the implication for poor yield. If resources are properly used, it will result to additional increase in output from existing hectares of rice cultivated (Abah *et al.*, 2015).

Agricultural marketing is the main driving force for economic development and has a guiding and stimulating impact on predicting and distribution on agricultural Produce. The increasing proportion of the population living in urban centers and rising level of income require more organized channels for processing and distributing of agricultural products (Isa *et al.*, 2012). The weak performance of agricultural market (both input and output market) in Nigeria has been recognized in various studies as a major impediment to growth in the agricultural sector and the overall economy (Abah *et al.*, 2015; Takele, 2010) also explain that Nigeria performance of agricultural marketing system is constraint by many factors such as: poor quality of agricultural produce, lack of market facilities, weak extension service which ignored marketing development and absence of marketing information. The broad objective of this study is to analyze the profitability of rice production and with the following specific objectives: describe the socio-economic characteristic of the respondents, estimate the cost and returns of the rice production in the study area and identify the constraints facing rice farmer in the study area.

MATERIALS AND METHODS

The Study Area

The study was conducted in Obi local government area of Nasarawa state. The area is located between latitude 8.2746° north of the equator and longitude 9.1849° east of the Greenwich Meridia (NiMet 2018). The study is as distinct wet (March- October) and dry (November-February) seasons. The average annual rainfall is approximately 1,500mm and the temperature is high throughout the year ranging between 22. 7°C – 36.8°C (NiMet, 2018).

The soil texture is clay which supports various types of rice and other crop like sugarcane. The Obi local government Area shares boundaries with Keana L G A, and Awe LGA in the south, Lafia LGA in the north while Doma LGA in the west. .The major occupation of the people is farming such as rice production, livestock production, fishing, hunting and trading of farm produce (NADP, 2023).

Sampling Technique and Sample size.

Multistage sampling was used in this study; first four (4) districts out of the six (6) were positively selected based on their intensity in rice production. The districts are: Dudugulu, Musha, Agwatashi, Deddere and Adudu. Secondly, two (2) villages was selected from each of the four (4) selected districts using random sampling which gave eight (8) villages. Thirdly, five (5) rice farmers was selected from each of the eight (8) villages using random sampling which gave the total of forty (40) respondents for the study.

Data Collection

Primary data was collected for the study with the aid of a structural questionnaire that was administered to the respondents in the study area. The information was elicited from input-output level, constraints facing rice farmer and socio-economic characteristics of the respondents

Analytical Techniques

Descriptive statistics such as percentage and frequencies distribution was used to analyze objectives i and iii. Gross margin (GM) was used to analyze objective ii

Model Specification



(a) **Gross margin analysis:** this is the difference between the Gross farm income (GFI) and the Total Variable Cost (TVC)

$$GM = GFI - TVC \quad \dots(1)$$

Where;

GM = Gross Margin, GFI = Gross farm income and TVC = Total variable cost.

(b) **Net farm income (NFI)** is the difference between the Gross margin (GM) and Total Fixed Cost (TFC).

$$NFI = GM - TFC \quad \dots(2)$$

Where;

NFI = Net farm income, TFC = Total Fixed Cost and GM is as previously defined.

RESULTS AND DISCUSSION

Socio-Economic Characteristic of Respondents

The age distribution of the respondents is presented in Table 1. The result shows that most (87.5%) of the respondents were in their active years. However, the results on the gender distribution of the respondents revealed that 80% of the respondents were male. This implies that male engage more in rice production than female. The result further shows that 65.5% of the respondents were married, this is an indication of labour supply in the study area.

Table 1 Socio-economic characteristics of Rice Farmers in the study area

Variable (n=40)	Frequency	Percentage
Age		
18-30	5	17.5
31-40	12	30.0
41-50	10	25.0
51-60	3	7.5
61-70	7	17.5
>71	1	2.5
Gender		
Male	31	77.5
Female	9	22.5
Marital status		
Married	29	72.5
Single	11	27.5
Farming experience		
1-10	13	32.5
11-20	16	40.0
21-30	7	17.5
31-40	2	5.0
41-50	1	2.5
51-60	1	2.5
Household size		
1-10	35	87.5
11-20	5	12.5
Farm size		
1-10	39	95.5
11-20	1	2.5
Level of Education		
Primary	14	35.0
Secondary	14	35.0
Tertiary	11	27.5



Other	1	2.5
Total	40	100

Source: Field survey (2025)

The result in Table 1 also shows that 70% of the respondents has household size between the range of 11-20. However, 62.5% of the respondents had farm size of 1-2ha. This indicates that most of rice farmers were small-scale producers in the study area. The result further revealed that 62.5% of the respondents had 11-20 years of experience in rice production. The result shows that majority (87.5%) of the respondents had one form of education or other in the study area. The implication is respondents can read and write since they have one form of formal education or the other that lead to increase in acceptance of innovation.

Costs and Returns of Rice Production

The Profitability of rice production was examined and presented in Table 2. The total variable cost in rice production was ₦65, 000 per hectare comprising of 18% rice tuber, 22.5% of fertilizer, 13.5% of chemical, 37.5% of labour cost and cost of transportation accounted 4.5%, the total fixed cost of production per hectare was ₦ 2,162.6, comprising of 0.9% of hoe and cutlass respectively. While costs of axe and basket accounted for 0.71 each respectively. The total cost of production for a typical rice farmers was ₦66,662.6. This is an indication that rice production required little capital in order to increase the profitability level of the farmers as well as curtailing the poverty level in the study area. The average gross return realized by rice farmers was ₦210,000 per hectare. The net farm income was ₦143,337.4. The returns per naira invested was ₦3.2, this implies that rice production is profitable in the study area. This concurred with Nwele, (2016) who study economics of rice production and marketing in Nigeria. A Study of Ebonyi State.

Table 2: Average cost and return per hectare of rice produced

Costs And Return	Amount(₦/ha)	% of Total Cost
A Variable Costs		
Rice seed	12,500	18.8
Fertilizer	15,000	22.5
Chemical	9,000	13.5
Labour	25,000	37.5
Transportation	3,000	4.5
Total variable cost	64,500	96.8
B Fixed cost		
Hoe	582.4	0.9
Cutlass	610.3	0.9
Axe	499.3	0.7
Basket	470.6	0.7
Total fixed cost (₦/ha)	2,162.6	3.2
C Total cost (₦/ha)	66,662.6	100.0
D Gross return	210,000	
E Net Farm income	143,337	
F Return on investment	3.2	

Source: Field survey (2025)

Constraints Faced by Respondents in the Study Area

The study observed that farmer faced constraints in their production activities. the constraints faced by farmers in the study area are presented in Table 2. The result shows that theft (57.11%), pest and disease outbreak (45.9%) low producer price (35.7%) and inadequate transport facilities (31.4%). This implies low returns obtained from rice production in the study area could



be as a result of the above listed constraints. On the other hand, limited market (214%) and unfavorable weather (14.3%). This implies that they have least negative effect on farmers output in the study area. This study agreed with Girei and Dire (2013) on their study of profitability and efficiency among the beneficiary farmers of national Fadama II Project in Adamawa State, Nigeria.

Table 3: Constraints in Rice production in the study area

Factor	frequency (N/ha)	percentage	Ranking
Limited market for product	23	57.5	3 rd
Inadequate storage facility	23	57.5	3 rd
Low producer price	21	52.5	4 th
Inadequate transport facility	21	52.5	4 th
Shortage of input	13	32.5	5 th
Unfavorable weather	27	67.5	2 nd
Outbreak of disease	21	52.5	4 th
Theft	36	90.0	1 st
Total	185		

Source: Field survey (2025)

CONCLUSION AND RECOMMENDATIONS

The result of the findings revealed that rice production was profitable enterprise in the study area, farmers also encounter some production constraints. The study recommends that farmers should be provided with adequate credit facilities at a reasonable interest rate in order to enhance their output which will translate into increase in farm family income. Farmers should utilize farm inputs that can increase their profitability level in the study area and Government and non-government organization (NGOS) should enhance extension service so that farmers can have access to latest information on how to utilize inputs for benefit of food security.

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