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Research Article

ECONOMICS OF RICE PRODUCTION IN EBONYI STATE SOUTH EAST NIGERIA

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ABSTRACT
Ebonyi state produces more than 50% of the total Nigerian output of rice. Rice is commonly produced in lowland /swamp lands. Rice output seems to be low relative to resources employed. The Study therefore sought to investigate the economics of rice production in Ebonyi State. A cost-route approach was used to collect data from 385 randomly selected farm families from all the rice producing communities of Ebonyi State. Gross margin analysis was used to analyse the data collected. Result shows that total rice gross margin obtained was positive (n125, 150.00 per hectare).the rate of return was 113% which was higher than the borrowing rate of 18%; suggesting a good return on investment. It is recommended that improved technology should be employed more in rice production in the area in order to increase productivity per area cultivated.

Key Words: *Economics, Rice, Production, Ebonyi, Southeast*

INTRODUCTION
Rice is the most popular cereal crop in Nigeria. Rice was once reserved for ceremonial occasions in the Nigerian diet. The popularity of rice is derived partly from the rising level of income and the relative convenience with which it can be processed and preserved (Onwuchekwa, 1988). With increasing urbanization, it is to be expected that the importance of rice would increase. This is largely due to the fact that rice is preferred by urban population, which is increasing faster than the whole national population as a result of higher rate of urbanization (NPC, 2002). It has been shown that rice has high positive income elasticity; it is replacing in particular tuber and root crops as well as other grains (maize, millet and sorghum) as the most important foodstuff for a significant proportion of the population.

Nigeria is a major rice producer in West Africa and was rated the region's largest rice producer in 1990 (IRRI, 1990). Rice cultivation is widespread throughout Nigeria with most of the rice grown in the Eastern and Middle belts of the country (WARDA, 1996). Rice production in the country increased significantly in the periods 1980 to 1998 due to increased in land area put into rice production. WARDA (1981) and IRRI (1990) showed that aggregate rice production in Nigeria increased from about 600,000 metric tons in 1980 to about 1,422,000 metric tons in 1989. The reports further showed that, out of the 4.6 million hectares of potential rice land across the country, the area put into rice production rose from 1.0 million hectares (22.3%) in 1988 (Ochigbo, 1994) to 1.8milion hectares (39.0%) in 1996 and 1998 (PCU, 2002). These figures are likely to continue to push upwards. The question remains, in rice production in Ebonyi State which is the largest producer of rice in Nigeria viable. The ever-arching objective of the study is to assess the economics viability of rice production in Ebonyi State, Nigeria

MATERIALS AND METHODS
Study Area
The research was carried out at the Teaching and Research Farm of the Faculty of Agriculture and Natural Resources Management, Ebonyi State University, Abakaliki. The State is located within latitude

$06^0 4^1$N and longitude 08^0 $6S^1$ E of South East derived savannah zone of Nigeria. The rainfall pattern is bimodal spreading between April and November with peaks in July and September.

Total annual mean rainfall was 1750mm while the annual minimum and maximum rainfall range from 17000mm to 18000mm. The temperature ranged from 27^0C to 31^0C for night and day temperatures respectively during the period. Relative humidity was high at 80% during rainy season and declines during the dry season to less than 65% (Ofomata, 1975). The soil is a product of successive marine deposits from ASU River belonging to the order ultisol classified as typic haplustult (FDALR, 1985).

Sampling Procedure

This was a village level study that covered a total of about 385 farm families within the three agricultural blocks of the state. For this study a multistage sampling procedure which involved simple random and purposive sampling techniques was employed for the data collection. From these zones all the communities that produce rice were selected. From here a list of all rice farmers was made from the Agricultural Development Project (ADP contact farmers). Based on this list, 100, 135 and 150 randomly selected rice farmers from the north, central and south zones respectively were made. Altogether, a total of 385 rice farmers were selected for the study. These samples of farmers were maintained as cohorts throughout the period of the study. Data was collected through the cost-route approach.

Data Collection

For purposes of this research only primary data were used. The primary data were collected from results of structured interview schedules and field observations. Field enumerators from Ebonyi state ADP assisted in data collection.

Methods of Data Analysis

The economics of rice production in the area was determined using enterprise gross margin analysis.

RGM=TR-TVC, where RGM is rice gross margin

TR is total revenue and

TVC is the total variable cost

RESULTS

Economics of Rice Production

The gross margin for one hectare of rice farm in Ebonyi State is presented in table1. In computing the costs of rice production, farm inputs are considered under planting materials, labour, and farm implements. Although most seed inputs were obtained from the farmer inventory of previous harvests and hence not purchased, all seed inputs were valued at their average market prices in the survey years. Similarly, all labour input including household labour was valued at the average wage rate for similar labour in the area. The cost of land was however ignored because, low land areas was assumed to have little or no opportunity cost outside farming (production of hydromorphic crops) in the study area.

Table 1 shows the total input and value of inputs used per hectare of rice farm enterprise in the survey year. The value of rice seeds alone accounted for 3.43 per cent of the total cost of production of rice per hectare. The sum of ₦82, 250 was spent on labour alone per hectare; cultivation operation was the most important item of cash expenditure, followed by weeding. In terms of labour input in mandays, cultivation operation also was highest, and the unit value of the operation was highest because the labour input of a man costs more than the woman and children (Okorji, 1990).

The higher wage rate of the tilling operation reflects the difficulty with which such operation could be. The depreciated values of farm implements used in the survey year amounted to ₦6250.00. Bags and baskets that had the highest depreciated values were used to carry seedlings and to bag the rice grains respectively.

In some cases the depreciated values of farm implements were ignored since the implement were used in other farm enterprises.

Table 1: Enter Price Gross Margin for 1ha of Milled Rice Farm in Ebonyi State

S/N	Item	Unit	Qty	Unit price (N)	Total price/Revenue	Total %
1.	Total Revenue					
	i Milled Rice	Kg	2500	95	230,000	
2	variable cost item					
a	Labour	mandays				
	i. Land clearing		20	300	6000	5.72
	ii. Tilling		40	750	30,000.00	28.61
	iii. Transplanting		30	250	7500	7.15
	Iv.Fertilizer application.		5	500	2500	2.38
	v. Weeding		30	500	15,000	14.31
	vi. Harvesting		10	500	5000	4.77
	vii. Threshing		10	500	5000	4.77
	viii. Parboiling		9	500	4500	4.29
	ix.Milling ,25kg			100	1000	0.95
	x. Transportation		_____	_____	2250	2.15
	xi. Bird scaring		_____	_____	4500	4.29
	Capital		_____	_____	82250	79.39
	i. Seed	Kg	50	72	3600	3.43
	ii. Fertilizer	Kg	6(50kg bag)	3000	18,000	17.17
	Total variable cost				**104,850**	**100**

Gross Margin =TR - TVC. N (230,000.00 –104,850.00) = N 125,150.00, Source: Computed from survey data (Ekpe, 2010).

The research assigned values to all aspects of costs involved in rice production (Table 2).

Table 2: Average Farm Implements used and the Depreciation Values

Farm Implement	No Owned	Unit Price	Total value	Life span	Dep. Value
Hoe	3	500	1500	5	300
Matchet	3	700	2100	5	420
Basket	5	300	1500	1	1500
Bags	100	40	4000	1	4000
Sickle	3	50	150	5	30
Manual planter	5	20	100	5	500
					N 6750

Source: Survey data (Ekpe, 2010).

This was calculated using the straight-line method of depreciation assuming a zero salvage value at the end of the useful life.

The total cost of production per hectare of rice in the survey year was ₦104850.00 out of which the planting materials accounted for 3.43 per cent, labour 78.45 per cent; farm implements about 5.82 percent and fertilizer 17.17 per cent.

Output and Returns

Table 1 shows the total output and value of output per hectare of rice enterprise. The value of the rice output was ₦230, 000.00 for 100 bushels (1 bushel = 25 kg) of milled rice realized per hectare in the survey year. The gross – return could be accounted for by the fact that rice prices have been pushing forward due to ban/high tariff of imported rice. This policy had changed the direction of rice demand to the local rice. The result is that demand is now much greater than supply (Igberi, 2005).

Analysis of Costs and Return

The net return per hectare, defined as the difference between Total Revenue/ha and Total cost of productions/ha, was N118900.00 in the survey years. This represents the return to land, risk, and management employed in the production of a hectare of rice enterprise. There has been generally a marked improvement in the profitability of rice enterprise over the past years. For instance, compared with the return/ha of rice (N38, 000.00) in 2000, the value increased to N62, 000.00 for 2001 farm year and N80, 000.00 for 2002 farm year and about =N=100,000.00 for 2003 (CAYS, 2003). This trend of remarkable increases is attributed to steady increase in tariff on rice importation since the inception of Obasanjo regime (1999-2005). Again on the average, however, the steady increase on net return/ha of rice enterprise results largely from the rising inflation in the country.

The gross return on investment divide by total cost gave a ratio of 1.19, implying that for every one naira invested in rice about N1.2k is returned. The net return divided by total cost gave a ratio of 1.13, which suggests that investment made on rice enterprise in the survey years attracted a rate of return of 113%. This rate of return is much higher than the prevailing official interest rate of borrowing between 18 – 26 per cent in Nigeria. This rate is about 80 per cent higher than the rate in 1990 (Okorji, 1990). Cost – return analyses showed that farmers spent about N44.44 to produce one kg of rice for which they realized N92.00 in the survey years. This net gain of about N47.56k per kg of rice produced suggests that the ban/high tariff on rice has a positive impact on rice farmers' income, and may serve as a stimulus for increased production. On the whole, rice production in Ebonyi State has positive gross margin as shown by this study because Total Revenue (TR) is far more than Total Variable cost (TVC). The profitability of rice enterprise and farmers income is expected to increase significantly if more land is put under rice production.

Conclusion

Rice enterprise is a profitable venture. It has the potential to profitably employ young school leavers. This when it happens can provide a job sink into which the teeming graduates of Nigeria can be absorbed.

Recommendations

It is recommended that effort should be made to reduce human labour in rice production. This will go a long way in saving money from labour which will invariably become a potential part of the farmer's income. Increasing the area cultivated to rice will also improve overall output of rice in Ebonyi State.

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