PROFITABILITY ANALYSIS OF RICE PRODUCTION IN TWO SELECTED LOCAL GOVERNMENT AREAS OF ZAMFARA STATE

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ABSTRACT

This study examined the profitability of rice production in Talata-Mafara Local Government Area of Zamfara State. Data were collected from 120 randomly selected rice farmers and analysed using farm budgeting technique. The result revealed that the farmers realized an average Net farm income of N76, 616 per hectare with a return of N0.60 on every naira invested. The study demonstrates that rice production in the study area is profitable. Effort should therefore be intensified by the government in assisting farmers to adopt new production technologies, in order to achieve high yields and increased returns.

Key words: Profitability; Rice; Costs and returns

INTRODUCTION

Rice is one of the most important staple food for several families the world over. It is the second most important cereal crop next to wheat. In Africa in general and Nigeria in particular, the demand for rice has been on the increase year in year out. Rice is the staple food in many countries of Africa and constitutes a major part of the diet in many others. During the past three decades the crop has seen a steady increase in demand and its growing importance is evident given its important place in the strategic food security planning policies of many countries. With the exception of countries such as Brazil, China, United States of America, India, etc which have attained self-sufficiency in rice production, rice demand exceeds production in most African countries including Nigeria and large quantities of rice are imported to meet domestic demand, usually - at huge expense depleting foreign reserves (Norman and Otoo, 2011).

Despite all commitments by Nigerian government and stake holders to ensure increased rice production in the country, yet the supply for rice to the teeming consumers is continually declining and local rice production could not meet even the local demand for rice needles to talk about exporting the produce to neighboring African countries. FAO (2000) reported that in 1996, Africa consumed a total of 11.6 million tones (Mt) of milled rice per year, of which 3.3 Mt were imported (i.e. 33.6%). As many as 21 of the 39 rice producing countries in Africa, imports between 50 percent and 99 percent of their rice requirement (FAO, 2000).

Nigeria has not yet been able to attain self-sufficiency in food production. Constraints to the rapid growth of food production are mainly that of low crop yields and resource productivity (Udoh, 2005). The existing low level of productivity in Nigeria's rice production reflects low level of technical efficiencies and poor returns which discourage investment (Federal Ministry of Agriculture, 1995; Ogundare, 2006; Udoh, 2005). Hence, the need for increased farm productivity, efficiency and profitability is no longer debatable but a necessity in view of imminent rice deficit experienced in the country adjudged by the over reliance on food importation in recent times. This study may be an additional source of information for policy makers.

According to FAO (2000), Africa's inability to produce rice to self-sufficiency levels is indicative of the presence of major constraints in the rice industry requiring urgent attention. It is therefore necessary to stop the trend of over-reliance on rice imports through increase in local production. Local potential resources for production should be exploited with sustainable strategies at all levels of the rice industry. Emmanuel (2011) reported that investment in agriculture is vital as its activities provide employment opportunities, poverty alleviation, and income or wealth creation for the poor. Thus, there is a need for renewed commitment to investment in agriculture which must focus on rice, the staple food for over half the world population. Akanimo (2011) reported that the Food and Agriculture Organisation and the world's bank are currently urging Nigeria and other Sub-Saharan African countries to invest in food production in a bid to increase food supply and improve foodsecurity situation of the people.

It is against this backdrop that this study examines the profitability of rice production in some selected local government areas of Zamfara State with a view to examine its profitability and suggest ways for improvement.

MATERIALS AND METHODS

Study Area

The study was carried out in Talata-Mafara and Bakura Local Government Areas of Zamfara state. Zamfara state is located between Latitude 11° to 13° north and Longitude 4° 20' to 7° 10' east. The state falls within Sudan and Guinea Savannah Ecological zones. It is characterized by two seasons, viz: the wet season and the dry season. Rainfall starts from June and ends in October with a gradual rise from May to August and a sharp decrease from September to October.

Data Collection and Analysis

Data collection was carried out using structured questionnaires administered to the sampled farmers. Four villages (Bakura, BirninTudu, Hura and Talata-Mafara) were selected for the study. The selection of the villages was done purposively because rice production is done at commercial level in this part of the state. Thirty (30) farmers were randomly selected from each of the four villages given a total sample size of 120 farmers. Data collected for the study included socio-economic characteristics of the farmers, such as age, sex, education, household size, costs of inputs, crops output, crop selling price and so on. The gross return from rice ware determined by multiplying the physical output of the commodity by its unit price. All relevant data collected were analyzed using descriptive statistics and farm budgeting technique.

A farm budget could be described as a physical and a financial plan for the operation of a farm for a given period (Olukosi and Isitor 1990). The budgeting analysis involves operations leading to estimates of gross revenue and total cost for the same production period (Olayemi and Oni, 1971). The farm budgeting model used in this study is expressed as:

NFI = GFI – TC

 Where:

NFI = Net farm income is the difference between gross farm income and the Total cost of production (₦)

GFI = Gross Farm Income represents the the total value of rice harvested on the sampled farms during the study (₦)

TC = Total Cost is made up of total variable cost and total fixed cost (₦)

TVC = Total Variable Costs include costs of inputs, labour, transportation, etc. (₦)

TFC =Total   Fixed Costs include rental value of land, depreciation on farm implements such as hoes, cutlasses, sickles, rake and watering pumps (₦)

RESULTS AND DISCUSSION

Socio-Economic Characteristics

Distribution of the farmers according to socio-economic characteristics is presented in Table 1. The result on age distribution reveals that 48. 33 percent of the farmers fell within the age range of 31 - 40 years. This implies that some of the rice farmers in the study area were middle aged, young and energetic people. Since traditional agricultural production system still depends on rudimentary implements operated by human muscle, the younger farmers will be more productive than the older ones. Moreover, the younger farmers are generally more able and willing to take risks in anticipation of profit than the older farmers. The findings of this study is similar to that of Yusuf (2008) that about 36 & 35 years were the average age of persons actually engaged in rice wholesaling and retailing, respectively, in the study area. The result of educational attainment of the rice farmers in the study area shows that 45 percent of the farmers had koranic education which might affect the degree of acceptance and adoption of improved farm technology while 32.5 percent of the farmers were found to have acquired secondary education which is likely to positively influence the acceptance   of   new innovations. This finding concurs to that of Yusuf (2008) who reported that farmers in his study area have undergone one form of education or the other. Result on household size shows that 38.33 percent had a household size of 6 - 10 persons. Though the mean household size was 10 persons, hired labour was employed to supplement family labour in the study area.

The result also showed that 38.33 percent of the rice farmers in the study area were found to have 6-10 years farming experience and 32.5 percent had between 11 and 15 years of experience. The implication of this finding is that the more experienced a farmer is, the greater is his ability to manage his farm and subsequently the higher the output. Farmers who had longer experience in rice production may have become more efficient through trial and error. The result revealed that most of the rice farmers (40.00 percent) in the study area had 1 to 2 hectares of land, by implication the farmers are small scaled subsistence farmers. In a similar study of profitability of upland rice production in IIaro, Ogun state, Idowu *et al.* (2009) reported 42.11 percent of the sampled farmers had small farm size of less than 1 ha.

Costs and Returns

The result of the costs and returns analysis is presented in Table 2. The result shows that the farmers incurred a total variable cost of ₦116,500 and a total fixed cost of ₦3,884 in producing a hectare of rice in the study area. The variable cost consisted of expenses on seeds, fertilizer, and irrigation, hired labour and inputted cost of family labour, while the fixed costs were limited to land and depreciation on farm tools and equipment. The total cost of producing a hectare of rice in the study area was ₦120,384.

The total variable cost accounted for 94.34% of the total cost of production while the fixed cost component constituted only 5.66% of the total. This depicts the low level of investment on fixed inputs in the study area, which demonstrate that the farmers are still at subsistence level using local farming tools, such as hoe, cutlasses, etc. This finding agrees with that of Yusuf (2012) who reported that total variable cost dominated the production cost with 96.82 percent of total costs while fixed costs accounted for only 3.18 percent in a similar study in Sokoto State. Among the variable costs, the labour input accounted for 47.36% of the total cost of production. Gross margin was achieved by multiplying the total physical quantity of the rice harvested by their unit prices for all the respondents. This gave a total amount of ₦78,500 /ha as gross farm income among the respondents. The Net Farm Income which was obtained by deducting total cost from gross farm income was found to be ₦74,616. The returns from every naira invested defined as net farm income per hectare divided by total costs per hectare was ₦0.62. This implies that farmers in the study area realized a profit of about ₦0.62 on every naira invested.

The distribution of respondents according to net farm income is shown on Table 3. The result indicated that only 1.67% of the farmers operated at a loss while 33.33% of the farmers earned a net farm income of between ₦30, 001 - ₦40, 000 per hectare. This indicated that rice production in the study .area is generally profitable. The findings of this study are in agreement with the findings of Olumakinde (2011).

CONCLUSION

The Socio-economic characteristics of the respondents revealed predominance of middle-aged, young and energetic people among the respondents with a mean age of 39.2 years. The farmers were also characterized by high level of farming experience, low education and an average household size of 10 persons. The gross farm income among the respondents was ₦195,000 per hectare with a net farm income of ₦74,616 per hectare. The return on every naira invested was found to be ₦0.62. The study demonstrates that rice production in the study area is profitable. This is indicated by 98.33 % of the farmers in the study area, who were found to have realized profits from their farms. Effort should therefore be intensified by the government in laying more emphasis on assisting farmers to adopt new production technologies, this being the basic requirements for high yields and increased returns.

Table 1: Distribution of the rice farmers' socio-economic characteristics

Variable	Frequency	Percentage
Age (Years)		
21 – 30	20	16.67
31 - 40	58	48.33
41 - 50	21	17.67
51 - 60	16	13.33
61 Above	4	3.33
Household size		
1 – 5	19	15.83
6 – 10	66	55.00
Above 11	35	29.17
Education		
Non-formal	76	63.33
Formal	44	33.67
Farming Experience (Years)		
1 – 5	25	20.83
6 – 10	46	38.33
11 – 15	39	32.50
16 Above	10	8.34
Farm Size (hectre)		
0.1 – 1.0	27	22.50
1.1 – 2.0	48	40.00
2.1 Above	134	37.50

Source: Survey Data, 2006

Table 2: Costs and returns of rice production in the study area

Items of variable cost	Cost (₦)/ha	Percentage (%)
Seed	5,400	4.64
Fertilizer	45,000	36.63
Pesticides & Herbicides	3,600	3.09
Family labour	16,000	13.73
Hired labour	39,600	33.99
Cost of irrigation	1,400	1.20
Transportation	4,000	3.43
Miscellaneous	1,500	1.29
Total variable cost (TVC)	116,500	100
Fixed cost Land	3,270	84.19
Depreciation on tools and equipment	614	15.81
Total fixed cost (TFC)	3,884	5.66
Total cost of production Returns	120,384	100
Gross farm income	195,000	
Gross margin	78,500	
Net farm income	74,616	
Return on every naira Invested	0.62	

Source: Survey Data, 2010

Table 3: Distribution of respondents according to their Net Farm Income

Net farm income (N)/ha	No of respondents	Percentage (%)
Loss	2	1.67
1-10,000	10	8.33
10,001-20,000	30	25.00
20,001-30,000	24	20.00
30,001-40,000	40	33.33
40,001-50,000	10	8.33
> 50,000	4	3.33
Total	120	100

Source: Survey Data, 2010

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