

## **COST BENEFITS ANALYSIS OF BROILER PRODUCTION IN DELTA STATE, NIGERIA: IMPLICATION FOR LIVELIHOOD SUSTAINABILITY**

**Peter Otunaruke EMAZIYE\*, Oghenesuvwe OKPARA\*\*, Oghenekome EMAZIYE \*\*\***

Delta State University, Faculty of Agriculture, \*Department of Agricultural Economics and Extension, \*\*Department of Animal Science, \*\*\*Faculty of Education, \*\*\*\*Department of Business Education, Abraka, Nigeria, Emails: peteremaziye63@gmail.com, okparaoghenesuvwe@gmail.com, komeemaziye@gmail.com

**Corresponding author:** peteremaziye63@gmail.com

### **Abstract**

*The main aim was to x-rayed broiler profitability in the surveyed area. Multi-stage sampling method was used in respondents' selection. Questionnaires were utilized to obtained data which were analysed employing descriptive statistics and benefit cost ratio model. The study witnessed moderate family size with secondary school level in their productive age. Broiler enterprise was engaged upon as a minor occupation with low mean broiler size of 100 birds and 10 years rearing experience. The findings indicated that broiler income and production cost were ₦285,000 (\$693.84) and ₦239,800 (\$583.80) respectively. Benefit cost ratio of 1.2 was realized which indicated 20% profit per cycle (five to six weeks). Considering the rate of quick turn-over the broiler production business is profitable. It recommends that flock size should be increased and effective management of resources to cut down production cost*

**Key words:** broiler, cost, livelihood, production, returns

### **INTRODUCTION**

In Nigeria, the agricultural sector play a vital role in poverty reduction, economic development, income generation, employment among others [11]. Livestock contributes substantially to Agricultural Sector in Nigeria. Poultry is integral part of livestock sector that is consist of Turkey, quails, guinea fowl, chicken, ducks etc. but chicken contributes about 95% of [7] entire poultry kept. In Nigeria, broiler farming play significant role in human protein supply accounted for about 21-50% as against beef and rabbit which were 18% and 21-22% respectively [5].

Poultry rearing in Nigeria is vital as it creates employment and food sustainability [9]. Also broiler meat is rich in mineral nutrients, cheap and culturally accepted in Nigeria [6]. This survey dwell on profitability of broiler as literatures indicated that minimum research have been carried out in this field.

Objectives of the survey were to determine the socio economic features of broiler farmers, determine mean income of broiler production per cycle, examine the average

broiler production cost per cycle, analyse the broiler production profitability.

### **MATERIALS AND METHODS**

Delta State with latitude 5.7040°N and 5.9339°E with total population of 5.7 million persons and average population density of 320 kilometer square [8] was chosen for the survey. Delta State is comprises of twenty five local government areas (LGAs) that are mostly agrarian in nature. The major occupation of the state is agriculture engaging in livestock, crops and fisheries among others. The data were got through planned questionnaires administered to respondents. Descriptive statistics and benefit cost ratio model were employed to analyse the data. Sampling procedure adopted for the work was multi-stage. Firstly, six LGAs were randomly chosen. Secondly, four communities each were randomly selected from the six LGAs earlier selected to amount to 24 communities and lastly, six (6) households each were selected purposively from the 24 communities earlier selected giving a sum of 144 broiler producers.

## RESULTS AND DISCUSSIONS

### Socio-economic features of broiler farmers

The variables in Table 1 indicates that persons with mean age of 42 years who were mostly female engaged in broiler enterprise in a minor occupation status. Most respondents were married households with secondary school educational status having 10 years rearing experience and 100 birds' size of flock averagely. This agreed with [3] research that productive aged farmers who were mostly married with moderate family size engaged in livestock (pig) production in Niger Delta area.

Table 1. Socio-economic features of broiler farmers

	Frequency (n = 144)	Percentage (%)	Mode/Mean
<b>Age (years)</b>			
23 – 33	37	25.7	42 years
34 – 44	50	34.7	
45 – 55	35	24.3	
56 – 66	22	15.3	
<b>Gender</b>			
Male	65	45.1	Female
Female	79	54.9	
<b>Household Size (persons)</b>			
2 – 5	23	16.0	10 persons
6 – 9	49	34.0	
10 – 13	39	27.1	
14 – 17	33	22.9	
<b>Occupation</b>			
Major	08	05.6	Minor occupation
Minor	136	94.4	
<b>Educational Status</b>			
Primary school	50	34.7	Secondary
Secondary school	73	50.7	
Tertiary school	21	14.6	
<b>Marital Status</b>			
Married	75	52.1	Married
Single	08	05.6	
Divorced	16	11.1	
Widow	45	31.2	
<b>Production Experience (years)</b>			
1 – 6	42	29.2	10 years
7 – 12	60	41.7	
13 – 18	26	18.0	
19 – 24	16	11.1	
<b>Size of flock</b>			
1 – 33	8	5.6	100 birds
34- 66	9	6.2	
67 – 99	26	18.1	
100 – 132	101	70.1	

Source: Field data.

This also collaborates the works of [1] which stated that a moderate household size and low educational level with many years of farming experience were engaged in goat production in Nigeria.

### Mean income of broiler production per cycle

The study has examined an average of 95 broilers raised to maturity as indicated in Table 2. The average meat selling price per kilogram was ₦1,500 thereby raising the total income per cycle of broiler production to be ₦285,000 (\$693.84) This agreed with [2] that total income from livestock (goat) production was substantial in Aniocha North LGA of Delta State.

Table 2. Mean Income of broiler production (per cycle)

<b>95 broilers</b>	
Quantity Sold (kg)	190
Selling Price per kg (₦)	1,500
<b>Total Income (₦)</b>	<b>285,000</b>

Source: Field data.

### Average production cost of broiler per cycle

The study x-rayed the average cost of production of 100 broilers from a day old to point of sales as contained in Table 3.

Table 3. Average Production cost of broiler production

Cost of 100 broilers (₦)	Amount (₦)
<b>(i) Variable cost</b>	
Cost of day-old chicks (100)	25,000
Labour cost	40,000
Wood shaven	4,000
Feeds	149,600
Transportation cost	4,500
Medication	6,500
Fuel	4,000
Miscellaneous expenses	2,000
<b>Total Variable cost (TVC)</b>	<b>235,600</b>
<b>(ii) Fixed Cost</b>	
Depreciation on:	
Feeders	1,200
Building	3,000
<b>Total fixed cost (TFC)</b>	<b>4,200</b>
<b>Total cost of production (TVC+TFC)</b>	<b>239,800</b>

Source: Field data.

It shows that the production total variable cost (₦235,600) were labour, purchase of wood shaving, medication, transportation, fuel and total fixed cost (₦4,200) were depreciation on building, and feeders which resulted to ₦239,800 (\$583.80) as total cost of production.

This research is in consonant with the findings of [3] that most cost of animal (pig)

production falls within variable cost in Niger Delta Region. Further in agreement with [10] that variable expenditure is higher in the production of broiler in Lagos State. This is also agreed with [4] that the major obstacle to broiler business is high production cost in Nigeria.

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### Profitability of broiler production

The research survey clearly indicated that the total income averagely and total cost of production averagely was ₦285,000 (\$693.84) and ₦239,800 (\$583.80) respectively. It also revealed that gross margin and net returns from broiler production was ₦49,400 and ₦45,200 respectively which indicates business profit. The broiler production benefit cost ratio was 1:2 stating 20% profit per cycle of five to six weeks as indicated in Table 4.

Table 4. Profitability of broiler production

Parameters	Amount (₦)
Total Income (TI <sub>b</sub> )	285,000
Total Variable Cost (TVC <sub>b</sub> )	235,600
Total Fixed Cost (TFC <sub>b</sub> )	4,200
Total Cost of Production (TC <sub>b</sub> )	239,800
Gross Margin (GM <sub>b</sub> ) = TI <sub>b</sub> - TVC <sub>b</sub>	49,400
Net Returns (NR <sub>b</sub> ) = GM <sub>b</sub> - TFC <sub>b</sub>	45,200
Benefit Cost Ratio (BCR <sub>b</sub> ) = TI <sub>b</sub> /TCP	1:2

Source: Computed from field data.

### CONCLUSIONS

The research study witnessed moderate family size of 10 persons with secondary school level of education in their productive age of 42 years.

Broiler production was engaged upon as a minor occupation with low mean broiler size of 100 birds and 10 years production experience. The research findings indicated ₦285,000 (\$693.84) and ₦239,800 (\$583.80) for broiler production income and production cost respectively.

Furthermore, benefit cost ratio of 1:2 was realized which indicated 20% profit per cycle (five to six weeks). Considering the rate of turnover the broiler production business is profitable.

It recommends that flock size should be increased and effective management to reduce the cost of production especially the variable cost.

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