ECONOMICS OF POULTRY PRODUCTION IN BAUCHI STATE: A CASE STUDY OF BAUCHI LOCAL GOVERNMENT AREA

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ABSTRACT

The study was undertaken to examine the economics of poultry production in Bauchi Local Government Area of Bauchi State. Cost, returns and constraints associated with poultry production under intensive system of management were examined. Four farms were randomly selected for the study. The major tools used for data analysis include simple descriptive statistics (mean, range and percentages) t-test, chi-square test and farm budget technique. Result of the cost and returns analysis showed that net profit per bird per production cycle in layer's enterprise ranged from N160 - N165 and N251 - N252 in 1992/93 and 1993/94 respectively. The net profit per bird for production cycles in broiler enterprise ranged from N130 - N146 and N173.20 - N178.80 in 1993 and 1994 respectively. There was a significant difference (P< 0.05) between the net profit per bird of layers and that of broilers, showing that layer's enterprise was more profitable than broilers enterprise. The major constraints associated with poultry enterprise include high cost of feed and prevalent diseases.

Key words: Economics, Production, Layers, Broilers

INTRODUCTION

Poultry keeping in the past was a sideline occupation. In some communities, the fowl is still used, as in the past, as a means of knowing the time. Today, poultry keeping has developed to the level of a commercial enterprise involving thousands of birds. Large poultry units have replaced small ones, while more efficient strains of birds, balanced feeds, intensive housing and better poultry equipments have come into use. The poultry industry has become a diverse industry with a variety of business interests such as egg production, meat production, hatchery and poultry equipment business (Oluyemi and Roberts, 1979).

However, the decision to start a poultry farm firm depend on whether or not the farmer is aware that poultry production is one of the most promising sources of additional income, protein intake and quick returns from investment (Kekocha, 1994). Poultry can be established with a minimum cost, and as a side project. Moreover, they can feed for themselves on free range without much care.

The products produced by or from poultry provide an acceptable form of animal protein to most people throughout the world with exception of strict vegeterians (Smith, 1990). Given the above circumstances, poultry production is advocated to interested individuals and corporate bodies. Hence the need for cost and returns analysis of the enterprise.

The broad objective of the study is to determine the profitability and major constraints of poultry production under intensive system of management in Bauchi Local Government Area of Bauchi State. The specific objectives are as follows:

- To describe the poultry production pattern and socio-economic characteristics of poultry farmers in the study area.
- To determine the profitability of poultry production under the intensive management system; and
- To identify the common problems faced by poultry farmers in the study area and suggest solutions to them.

MATERIALS AND METHODS

The Study Area:

Bauchi Local Government Area, is one of the twenty three local government areas in Bauchi State. It lies along latitude 10° 17' East and longitude 9° 47' North with an altitude of 6902 metres above sea level (Meteorogical station, Bauchi aerodrome, 1988). The Area falls within the western zone of Bauchi State. It is bounded on the North by Darazo Local Government, on the East by Alkaleri Local Goverment, and on the South by Dass Local Government Area respectively.

Bauchi metropolis, apart from being the state capital and headquaters of the local government, is also the main urban centre in the state. It has the highest concentration of consumers of poultry products. This could partly be the reason why the few poultry farms in the local government are concentrated within it.

Four farms were randomly selected. Random sampling technique was used to ensure that all

TABLE 1: DISTRIBUTION OF RESPONDENTS ACCORDING TO SOCIO-ECONOMIC CHARACTERISTICS

I AGE LIMIT (YEARS):	NUMBER OF RESPONDENTS	PERCENTAGE %
25 - 26	1	25
35 - 45	2	50
46 - 55	1	25
Above 55	0	0
Total	4	100
II EDUCATIONAL BACKGROUND:		
Illitrate	0	0
Formal	4	100
Informal	0	0
Total	4	100
III TYPE OF MANAGEMENT:		
Deep litter	4	100
Battery cage	0	0
Others	0	0
Total	4	100
IV TYPE OF FLOCK:		
Layers only	2	50
Broilers only	1	25
Layers and broilers	1	25
Total	4	100
V. TYPE OF LABOUR USED:		
Hired	1	25
Family	2	50
Hire/family	1	25
Total	4	100

poultry farms in the study area were given equal opportunity of being selected for the study, so that samples used for the study were the true representative of the total farms. Farms selected for the study include: Balu farm (Rhoda farm), Titiloye farm, Dauda farm and Woji farm.

Data Collection: The main tool used for data collection was a structured questionniare. Coupled with the questionnaire, were scheduled interviews with the farm managers and farm owners. The first section covered socio-economic characteristics of respondents, such as Age, Educational background etc. The second section covered cost and returns, while the third section covered sources of finance. Section four and five covered marketing, problems and suggestion of possible solutions based on the farmers/managers experience respectively.

Tools of Analysis: The major tools used for analysis in this finding includes: simple descriptive statistics (mean, range and percentages which were used to describe socio-economic characteristics of the respondents. Farm budgeting model, t-test, chi-square test and ratios.

RESULTS AND DISCUSSION

Socio-Economic Characteristics of Respondents:

Table I shows that majority of the respondents fall between the age bracket of 36 and 45 years. This age bracket accounted for 50% of the poultry farmers under study. Because poultry farm is surrounded by risks e.g. diseases outbreak, fire outbreak, theft among others, it therefore required people who are able and willing to take risk in expectation to profit. The respondents in the age bracket of 35 - 45 year can still take up in case of failure and at this age, they will be able to take sound decisions with regard to their farms.

The respondents were formally educated. Roger and Shoemaker, (1971) and Obibuaka (1983), stated that education is not only an important determinant of adoption of a new

TABLE 2: COST AND REVENUE FROM LAYERS PRODUCTION (N)

Year of Production	1992/93				1993/94			
Farm	A	B	C	D	A	B	C	D
No. of day old chicks	1,000	5,000	NA	80	1,000	3,000	NA	53
Variable Cost (VC)								
1. Chicks	18,000	90,000	NA	360	23,000	69,000	NA	1,219
2. Feed	380,000	1,896,000	NA	7,584	680,000	2,042,000	NA	36,100
3. Labour	50,000	54,000	NA	800	60,000	70,000	NA	1,200
4. Medication	1,500	4,500	NA	200	2,500	6,000	NA	330
5. Miscellaneous	1,000	3,000	NA	50	2,000	4,500	NA	106
Total Variable Cost (TVC)	451,300	2,048,400	NA	8,994	768,000	2,191,500	NA	38,955
Fixed Cost (FC)								
Depreciation on build	2,000	3,000	NA	40	2,000	3,000	NA	40
Depreciation on equip.	500	1,000	NA	10	500	1,000	NA	10
Total Fixed Cost (TFC)	2,500	4,000	NA	50	50	2,500	NA	50
Total Production Cost (TPC)	453,800	2,052,400	NA	9,044	770,500	2,195,500	NA	39,005
Total Cost per bird	515,70	446,200	NA	476,000	837,500	795,500	NA	764,80
No. of layers	880	4,600	NA	19	920	2,760	NA	51
Returns from sales								
1. Eggs	506,776	2,398,320	NA	10,252,80	835,820	2,449,420	NA	43,136
2. Spent Hens	88,000	414,000	NA	1,000	165,600	441,600	NA	8,620
3. Litter	-	-	NA	-	-	-	NA	50
Total Returns (TR)	594,776	2,812,320	NA	12,182,80	1,001,420	2,891,020	NA	51,806
Total returns per bird	675.90	611,40	NA	641,20	1,088,50	1,047.50	NA	1,015.80
Net Income (NI)	140,976	759,920	NA	3,138.80	230,920	695,520	NA	12,801
Gross margin (GM)	143,476	763,920	NA	3,188.80	233,420	699,520	NA	12,851
Net profit per bird	160.20	165.20	NA	165.20	251.00	252.00	NA	251.00

innovation, but also a tool for successful implementation of innovation for profitability.

Also all the respondents were using deep litter system of management. The farmers indicated that deep litter system is cheaper and more efficient if well managed especially in the tropics. Sainsbury (1992), reported that the system is popular and simple. Oluyemi and Robberts (1979) reported that droppings fall into drier material which is easily removed and useful in controlling diseases infections largely because it reduces the concentration of pathogens. It was evident from Table 1 that 50% of the respondents engaged in the production of eggs, while 25% each were producers of broilers and broilers/layers respectively. This shows that most of the farmers were egg producers. This could be attributed to the fact that most poultry enterprenuers are of the view that egg production is more profitable than poultry meat production. Oloyede and Akinwumi (1979) reported that a casual observer feels convinced that egg production is a profitable venture in Nigeria. They added that once the pullets are raised to the point of lay, the processes become fairly simple as sales of output (eggs) have not created much problem because of it's high demand and the return from the sales of egg can be used as outflows in the business.

Table 1 also shows that 50% of the respondents used family labour while 25% of them used hired/family labour. This could partly be due to family size and scale of production.

Cost and Revenue Analysis:

Total cost of production is the total expenses incurred during the production period. It include variable and fixed cost, variable cost include; chicks, feeds, labour, medication and miscellaneous. Fixed cost on the other hand include cost of buildings and equipment depreciation respectively. Revenue is the gain or benefit derived from sales of output. The source of revenue in the study was from the sales of poultry products which include eggs culled/spent birds and litter. Revenue is computed using the formular as follows:

$R = Q \times P$

TABLE 3: COST AND REVENUE FROM BROILER PRODUCTION(N)

Year of production			1993				1994		
Farm	A	B	C	D	A	B		C	B
	A	B	C	D	A	B		C	B
No of day old chicks	NA	500	110	NA	NA	500		193	NA
Variable Cost (VC)	NA	10,00							
1. Chicks	NA	10,000	2,100	NA	NA	14,00		2,958	NA
2. Feed	NA	22,000	5,790	NA	NA	29,090		7,920	NA
3. Labour	NA	3,500	700	NA	NA	4,200		710	NA
4. Medication	NA	1,000	310	NA	NA	1,200		430	NA
5. Miscellaneous	NA	600	155	NA	NA	800		300	NA
Total Variable Cost (TVC)	NA	37,100	9,055	NA	NA	48,290		12,318	NA
1. Dep.on building									
Fixed Cost (FC)									
1. Dep on building	NA	200	155	NA	NA	200		155	NA
2. Dep. on equip	NA	57	70	NA	NA	57		70	NA
Total Fixed Costs	NA	257	225	NA	NA	257		225	NA
Total Production Cost	NA	37,357	9,275	NA	NA	48,447		12,543	NA
Total cost per bird	NA	79.50	87.50	NA	NA	105.30		126.70	NA
No. of culled birds	NA	470	166	NA	NA	460		99	NA
Returns from sales									
Culled birds	NA	54,512	72,720	NA	NA	64,539		16,830	NA
Total Returns	NA	"	"	NA	NA	"		"	NA
Returns per bird	NA	116.00	120.00	NA	NA	140.00		170.00	NA
Net income(NI)	NA	17,155	3,445	NA	NA	16,092		170.00	NA
Gross Margin (GM)	NA	17,412	3,770	NA	NA	16,349		4,512	NA
Net profit per bird	NA	36.50	32.50	NA	NA	44.70		43.30	NA
Net profit per bird for									
the four cycles	NA	146.00	130.00	NA	NA	178.80		173.20	NA

where,
R = Revenue
Q = Quantity of output
P = Unit prices of output

Table 2 shows that the layer's enterprises major source of revenue was the returns from eggs, which constitute the bulk of the total revenue with over 80% of the total revenue in the farms and for the two production cycles or period (1992/93) and (1993/94). This was followed by returns from spent hens which constitute 11 - 13% and 15 - 16% of the total revenue in the same production periods.

However, only one farm reported the sales of litter and the returns from it, constitute less than 1% of the total revenue. On the other hand, in the broiler's enterprise, returns were solely from sales of culled or matured chickens or birds, hence it constitute 100% of the total revenue. All the farms had an average of four (4) production cycles of broilers within one production cycle of the layers enterprise. Although, the farms were well informed of the possibility of having more than four (4) production cycles within one production cycle of layer's production has to be timely according to respondents to meet period of high demand of broilers, usually during ceremonies (such as, sallah and christmas). Table 2, shows, Net income (NI), Gross Margin (GM) and Net Profit per Bird (NPB) for layers enterprise respectively. Net income (NI) and Gross Margin (GM) varies with farm size. Farm with large number of birds has high net income (NI) and Gross Margin (GM). However, to measure the profitability level of each farm, net profit per bird was used. Table3 shows that the net profit per bird ranged from N160.20 - N165.20 and N251.00 - N252.00 in 1992/93 and 1993/94 production cycles respectively.

Table 3 shows that the net profit per bird ranged from N32.50 - N36.50 and N43.30 - N44.70 in 1993 and 1994 respectively. Hence the net profit per bird for the four (4) production cycles spreaded within one production of layers ranges from N130.00 - N146.00 and N173.20 - N178.80 in 1993 and 1994 respectively. This shows that layers enterprise was more profitable than broilers enterprise. Table 4, shows the average

profit per birds in both layers and broilers enterprise.

TABLE 4: AVERAGE PROFIT PER BIRD IN LAYERS AND BROILERS ENTERPRISES

*Farm	Layers	Broilers
A	206.60	-
B	208.60	162.4
C	-	151.60
D	207	-

*Key
A - Balu farm, Fed low-cost housing, Bauchi
B - Titiloye farm, Yelwa, Bauchi
C - Dauda farm, Yelwa, Bauchi
D - Woji farm, Gombe road, Bauchi

From the result of the study, educaton is a vital tool for intensive poultry production. Feed cost, inadequate funds and diseases outbreak are major problems of poultry production in study area. However, result on cost and return showed that layers enterprise is more profitable than broilers in the study area.

Based on the major findings of the study, the following recommendations are made:

- Poultry farms should compound feed locally using local ingredients available such as soyabean, bloodmeal, bonemeal etc.
- Poultry farmers should form cooperative societies to enhance their loan procurement capacity.
- Labour should be used efficiently and security of poultry farms should be ensured.
- The government should subsidise cost of medication and feeds for poultry farmers.

These recommendations if implemented can help redeem problems of poultry enterprise in the study area in particular, Bauchi State and the nation at large.

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