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Technical Efficiency of Broiler Production in Delta State, Nigeria

[1*]Nwadiolu, Romanus and [2]Akpodiete O. J.

[1, 2]Department of Agric. Extension & Manage net

Delta State Polytechnic, Ozoro

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Abstract

Purpose: The study examined the technical efficiency of broiler production in Delta State, Nigeria. Specifically, it determined the effects of socio-economic characteristics of the farmers on production output, determined the profitability of broiler production, and established the levels of technical efficiency attained by the farmers. It also ascertain the socio-economic factors of the farmers that influence their technical efficiency levels; assessed the nature of returns to scale and elasticities of broiler production inputs; and identified the constraints to broiler production in the area. A survey research design approach was used in the study. Multistage random sampling technique was used to select 240 registered broiler farmers. Primary data were collected in the 2019 production season using structured questionnaire administered to the respondents by personal interview.

Methodology: Descriptive and parametric statistics such as frequencies, means, percentages, ratios, enterprise budgeting, profit function regression and Cobb-Douglas stochastic frontier regression techniques were used in data analysis.

Findings: Findings indicated that broiler production output was significantly influenced by age, household size, farm size, farming experience and cost of feeds while gender, marital status, educational level, access to credit and extension visits were not significant. Mean technical efficiency scores of 0.94 was attained with 0.97 maximum and 0.90 minimum. Output elasticities with respect to farm size, labour, capital and feeds were 0.42, 0.13, 0.13 and 0.17 respectively. Technical efficiency of the farmers was significantly influenced by educational level, farming experience, household size, gender and access to credit, but weakly determined by age. Broiler farms operated at decreasing returns to scale. Major constraints to broiler production in the area arranged in descending order of seriousness were high cost of feeds, inadequate capital, high cost of labour, parasites and diseases, high mortality rate and inadequate feeds.

Unique contributor to theory, policy and practice: Policy measures such as increased budgetary allocation to livestock production, subsidization of inputs, provision of soft loans to broiler farmers by relevant institutions, provision of requisite infrastructures and improved funding of extension agencies to enhance information dissemination to broiler farmers are advocated.

Keywords: *Broiler Production, Technical Efficiency, Cobb-Douglas Stochastic Production Frontier Function Delta State, Nigeria.*

1 Introduction

The poultry industry in Nigeria has undergone a significant transformation from peasant to modern production system. This can be found in the countryside and urban centers today [13]. [29]. As a result of increase in population and demand for animal protein, different sources of poultry protein are available, one of which is the broiler, which serve as a good source of animal protein. Studies have shown that broiler enterprise, apart from its profitability in terms of income to the farmers, broiler protein is essential for normal physical and mental development of man Food and Agricultural Organization [14]). In a large number of low-income countries, small-scale household production is the largest system of poultry production and a substantial source of income and nutrition for poor households. In Ghana, for example, rural poultry account for 60-80 percent of the national poultry population [13]. In a small-scale poultry production, the poultry are kept under low-input, low-output conditions and managed by women and children of the household [27].

In addition, small-scale commercial poultry production farms are generally characterized by flocks' size ranging from 50-1000 birds of local breeds or exotic-breeds [27]. Farmers usually provide housing structure made of local materials, purchase part of their feeds, use vaccines and veterinary services whenever available. This system is more prevalent in urban and semi-urban areas. Output is usually sold to nearby urban centers with varying degrees of organization in the marketing system, [27]).

The role of the poultry industry in Nigeria has assumed a significant status over the years in terms of social, economic and dietary importance to both country and citizenry. The Food and Agriculture Organization reports that Nigeria produces above 550,000MT of poultry meat per annum and 700,000MT of eggs [15]. This attracts some form of interest because apart from bridging the protein deficiency gap in our diets, it also empowers the people especially the rural poor economically. Interestingly, poultry meat and eggs are consumed animal protein without (or little if any at all) religious or cultural prohibitions in Nigeria. It was recorded that the poultry industry contributed about 25% of the country's agricultural, gross domestic product (GDP) [16]) and meets the needs of man in meat and egg supply, organic fertilizers, research, medicine and aesthetic value [5]).

Broilers are birds that grow rapidly and reach marketable size after two to three months. They need enough feeds to maintain their body weight. Traditionally, broiler product has been a part-time or supplementary enterprise in many Nigeria farms. One or more members of the family may be employed off the farm or engaged in other farming enterprises [30].

In spite of the nutritive value of poultry meat; its production in the nation is terribly insufficient as reflected in the wide gap between demand and supply of the product, this could be attributed to various issues that poultry farmers in Nigeria are facing. The main problem of broiler production in Nigeria is that of low productivity, high cost of production, inadequate extension services and training facilities [24]. For Nigerian to be able to solve this issue of deficient animal protein broiler production must be technically efficient and profitable.

Inadequate capital, illiteracy and lack of technical experience are some of the most important socio-economic factors inhibiting broiler poultry production in Nigeria. The technical aspect is of serious concern because the combination of these limited resources and inputs have important implications on the output level and to a large extent the trading of meat and poultry products globally [19]. Hence the capacity to develop technical production practices that are consistent with environmental and economic conditions is important to boost poultry production in Nigeria. Therefore, the question of how technically efficient the producers are arises. The ability of broiler poultry farmers to adopt new technologies and achieve sustainable production depends on their levels of technical efficiency. The efficiency of input allocation and utilization in any agricultural enterprise enhance the profitability of such an enterprise [28]. More importantly, examining technical efficiency will not only enable farmers to increase the use of productive resources, it will also give direction for the adjustment required in the long run to achieve food production sustainability [24].

The major objective of the study was to examine the technical efficiency and profitability of broiler production in Delta State, Nigeria. The specific objectives were to: determine the effects of socio-economic characteristics of the farmers on production output; determine the levels of technical efficiency of the broiler poultry farmers; ascertain the socio-economic factors of the farmers that affect technical efficiencies of broiler production. and to identify the constraints to broiler production in the area.

2 Methodology

2.1 The Study Area

Delta State was carved out of the former Bendel State on 27th August, 1991. The State was created following agitations for the creation of a separate distinct state by the peoples of the old Delta province. They are Urhobos, Ijaw, Izon, Isoko, Itsekori, Ukwuani, Anioma and Ika. Delta State covers a landmass of about 18,050km^2, of which more than 60% is land. The state lies approximately between longitude $5^0.0^0$ and $6^0.30^1$ North. It is bounded in the North and West by Edo State, the East by Anambra, Imo and Rivers State, Southeast by Bayelsa State, and on the Southern flank is the Bight of Benin which covers about 160 kilometres of the state's coastline. Delta State is generally low-lying without remarkable hills. The state has a wide coastal belt inter-lace with rivulets and streams, which form part of the Niger Delta.

The state is ethnically diverse, with various linguistic stocks. It consists of three senatorial districts. The vast majority of inhabitants are Christian, with very few practicing traditional religion. Delta State is an oil and agricultural producing State of Nigeria, situated in the region known as the South-South geo-political zone with a population of 4,112,445 (males: 2,069,309; females:2,043,136) (National Population Commission (NPC), 2006).

The capital city is Asaba, located at the northern end of the state with an estimated area of 762 square kilometres (294 square meters). There are 25 Local Government Areas (LGAs) in the State (Fig. 3.1). Agriculture is the predominant occupation in rural areas engaging more than 70% of the rural

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population. The major crops cultivated in the state are cassava, yam, maize, cocoyam, oil palm, plantain/banana and leafy vegetables. An important feature of the farming system in the upland area where is there pressure on land is the compound and homestead farms.

2.2 Population and Sampling Procedure

The study population was 482 registered broiler poultry farmers in the twenty-five (25) Local Government Areas, in the State, namely Ethiope East, Uvwie, Aniocha North, Aniocha South, Ethiope West, Okpe, Sapele, Udu, Ughelli North, Ughelli South, Ika North East, Ika South, Ndokwa East, Ndokwa West, Oshimili North, Oshimili South, Ukwani, Bomadi, Isoko North, Isoko South, Patani, Warri North, Warri South, Warri South West.

These L.G.As are grouped into three Agricultural zones, namely Delta North, Delta South and Delta Central. Multistage-random sampling method was used to select 240 respondents for the study. At stage I, four LGAs were randomly selected from each Agricultural zone. This gave a total of 12 LGAs. Stage II involved random selection of four communities from each of the selected LGAs to arrive at a total of 48 communities. Finally, Stage III involved the random selection of five broiler poultry farmers from each of the selected communities, giving a total sample size of 240 broiler poultry farmers.

2.3 Methods of Data Collection

Data were collected on socio-economic variables of the respondents such as age, gender, household size, marital status, educational level, amount of credit obtained, sources of income, farming experience, location of farm and contact with extension agents. Data on production variables such as farm size, material inputs, labour supply and use, output of broilers with their current market prices, and broiler production constraints were elicited.

2.4 Estimation Technique for the Stochastic Frontier Production Models

The maximum likelihood estimates (MLE) of the parameters of the mdoel defined in equation (3.2) and (3.4) and the estimates of farm specific technical efficiency (TE) of equation (3.3) was obtained using the computer program FRONTIER VERSION 4.1 (Coelli, 1996; [8]The FRONTIER 4.1 program gives the variance parameters (σv2 and σu2) of the likelihood function in terms of the following parameterization:

$$\sigma^2 = \delta_v^2 + \delta_u^2 \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots \text{(3.10)}$$

and

$$\gamma = {\delta_v^2}/{\sigma^2}\text{, where } \gamma \text{ is defined for } (0 \le \gamma \ \ge 1) \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots \text{(3.11)}$$

A number of specification test was performed in order to capture the appropriateness of alternative model formations. While the asymptotic t-ratios for individual parameters are informative. Chukwuji (2006) showed that the generalized likelihood ratio (LR) test should be preferred for models involving

inefficiency variables. The statistic used to test the restrictions on parameters Ho against an alternative H1 is computed as:

$$LR = 2\{1nL\ (Ho) - 1nL\ (H1)\} \dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots (3.12)$$

Where: L (Ho) denotes the value of the log-likelihood function under the null hypothesis and L (H) is the value of the log-likelihood function under the alternative hypothesis for any pair of hypothesis being tested. Under the null hypothesis, this statistic follows a Chi-square (x^2) distribution with appropriate degrees of freedom equal to the number of parameter restrictions.

The null hypothesis involves parameter γ, which as a ratio of two variance is necessarily positive, the test statistic follows a mixed Chi-Square (x^2) distribution and the critical value with degree of freedom equal to (q + 1) was obtained in Kodde and Palme (1986), where q is equal to the number of parameter restriction [6].

2.5 Multiple Regression Model Specification

The multiple regression was used to assess the effects of respondent's socio-economic factors, namely age (AGE), education (EDU), experience (EXP), household size (HOS), gender (GEN), access to credit (ACC), marital status (MAS), labour (LAB), cost of feed (COF), farm size (FAS) and Extension Visits (ETV). The implicit form of the model is given as:

OTP = F(GEN, AGE, MAS, HOS, EDU, EXP, ETV, MCG, LAB, ACC, COF, FAS,)

Where:

Output (OTP) = output of broiler (kilogrammes)

GEN = gender (dummy: male = 1, female = 0)

MAS = marital status (dummy: married = 1, otherwise = 0)

HOS = household size (number)s

EDU = educational level (years)

EXP = years of experience (years)

LAB = labour (man-days)

ACC = access to credit (dummy: accessed credit = 1, otherwise = 0)

COF = cost of feed (Naira)

FAS = farm size (total number of broiler stocked)

ECV = Extension Visits

The production function was fitted with three functional forms, namely linear, exponential, semi-log and double-log (Cobb-Douglas). The explicit expression of the models are:

***Linear**: OTP = b_0 + b_1GEN + b_2AGE + b_3MAS + b_4EDU + b_5EXP + b_6LAB + b_7ACC + b_8COF + b_9FAS + b_{10}ETV*

***Exponential:** lnOTP=bo + bilnGEN + $b_2$lnAGE + $b_3$lnMAS + $b_4$lnEDU + $b_5$lnEXP + $b_6$lnLAB + $b_7$lnACC + $b_8$lnCOF + $b_9$lnFAS + b_{10}lnETV*

***Semi – log**: OTP = b_0 + b_1 1n GEN + b_2 1n AGE + b_3 1n MAS + b_4 1n EDU + b_5 1n EXP + b_6 1n LAB + b_7 1n ACC + b_8 1n COF + b_9 1n FAS + b_{10} 1n ETV*

***Double – log**: 1n OTP = 1n b_0 + b_1 1n GEN + b_2 1n AGE + b_3 1n MAS + b_4 1n EDU + b_5 1n EXP + b_6 1n LAB + b_7 1n ACC + b_8 1n COF + b_9 1n FAS + b_{10} 1n ETV*

3 Results and Discussion

3.1. Effect of Socio-Economic Characteristics of the Broiler Farmers on Production Output

The effect of socio-economic characteristics (regressors) of broiler farmers on production input (regressand) was determined using multiple regression analysis. The regressors used included age of farmers represented by AGE, gender of the farmers (GEN), household size (HHS), marital status (MAS), farm size (FAS), Educational level (EDL), farming experience (FAE), cost of feed (COF), access to credit (ACC) and extension visit (EXV). Four functional forms of the regression model (Linear, Exponential, Semi-log and double-log) were fitted with data and ran using MINITAB Statistical package. Production output of the linear model (Table 4.1) gave the best result in terms of number, signs and sizes of the lead equation.

A total of ten regressors were included in the model. Five regressors, namely; age, household size, farm size, farming experience and cost of feeds were statistically significant while the remaining five genders, marital status, educational level, amount of credit obtained, and extension visit were not significant. The coefficients of household size, farm size and farming experience were positive and statistically significant at 1% level while household size was a significant at 5%. This implies that the farmers with higher level of household size, farm size, farming experience and Extension visit higher levels of production output than otherwise and production function analysis.

3.2 Broiler Farmers Technical Efficiency Score.

The distribution of broiler farmers' technical efficiency scores is shown in Table 4.5, the result indicated that majority (94.34%) of respondents fell within the technical efficiency range of 0.8 – 1.00. A maximum score of 0.97, minimum of 0.90 and mean value of 0.94 were computed. This implied that the broiler farmers were technically efficient in broiler production; however mean technical efficiency gap of 0.10 (10%) still existed.

Table 1: Estimated Technical Efficiency Scores of the Broiler Farmers.

Technical efficiency. Score	Frequency	%

Range		
0.01 – 0.20	-	-
0.21 – 0.40	1	0.47
0.41 – 0.60	-	-
0.61 – 0.80	11	5.16
0.81 – 1.00	200	94.34
Mean	-	0.94
Maximum	-	0.97
Minimum	-	0.90

Source: Computed from survey data, 2020.

The gap created by the inefficiency levels suggested that opportunity existed for increasing productivity and income through increased efficiency in resource utilization by broiler farmers in Delta State. The finding is in consonance with Lamson (2014) and Ocholli and Ayola (2018) who reported existence of efficiency gap in broiler production in Oyo and Benue States respectively.

3.3. Factors affecting technical efficiency.

The maximum likelihood estimates of the stochastic frontier production function for broiler production in the study area are presented in Tabl 4.6. Production variables such as farm size, labour, capital and feed and socio-economic variables including farmers age (AGE), educational level (EDU), years of experience (EXP), household size (HOS), gender (GEN), and access to credit (ACC).

Table 2.: Maximum likelihood estimates of parameters of the cobb-Douglas stochastic frontier production function for broiler production in Delta State, Nigeria

Variable frontier	Parameter	Coef	T

Production factor			
Constant	βo	2.40	7.56
Ln farm size	Bf	0.42	11.02***
Ln Labour	βL	0.13	3.14***
Ln capita	Bc	0.13	4.20***
Ln feed	Bf	0.17	10.34***
Efficiency			
Constant	δ_0	-3.31	-1.93*
AGE	δ_1	9.98	0.99
EDU	δ_2	8.91	2.46**
EXP	δ_3	9.67	2.23**
HOS	δ_4	-0.20	-2.10**
GEN	δ_5	0.30	1.14*
ACC	δ_6	0.29	1.78*
Sigma Square $\delta^2 = \delta^2v = \delta^2u$		0.15	3.74
Gamma $Y = \delta^u/\delta^2$		0.77	9.14
Log likelihood function $L(H_1)$		24.57	

Source: Field Survey, 2020. Note *** = significant at 1% level, ** = significant at 5% level, * = significant at 10% level. coef = coefficient, T = t-statistic

It could be observed from the table that all coefficients of the production variables (farm size, labour, capital and feeds) in the model exhibited the expected positive sign showing a direct contribution to the output. Farm size has a coefficient of 0.42 and significant at 1% level of probability. Labour has a coefficient of 0.13 and significant at 1%. In the same way, capital and feed have coefficients of 0.13 and 0.17 respectively and at significant 1% level of probability. This implies that a 1% increase each in farm size, labour, capital and feed, keeping other factors constant will increase output by 0.42%, 0.13%, 0.13% and 0.17% respectively. The result agrees with Ewubare and Ozar (2018) on effect of poultry production on agricultural production in Nigeria; and Shalid (2018) on allocative efficiency of input and output in broiler production, which stated that broiler farmers in the country were able to increase their output by increasing the quantities of labour, farm size and feeds. The positive and significance effect of farm size, labour, capital and feed have also been reported by Ezeh *et al.* (2012), Olorunwa (2016) and Pakage *et al* (2014).

3.4. Determinants of Inefficiency.

The sources of inefficiency as shown in the Stochastic frontier production function analysis for broiler production using Maximum Likelihood estimate (Table 4.6) include age, educational level, farming experience, household size, gender and access to credit. As stated earlier, out of the six predictors included in the model five namely, educational level, farming experience, household size, gender and access to credit were statistically significant, while age was not.

Educational level: The estimated coefficient of educational attainment was positively signed and significant influence on inefficiency on broiler production. This is at variance with *apriori* expectations that educational level should have negative effects on inefficiency and positive relationship with technical efficiency. Higher educational level is expected to enhance a farmer's ability to understand and adopt new ideas in order to improve technical efficiency, output and profit. The finding agree with Ocholi and Ayila (2018) who reported that farmers with higher educational level were more efficient than their less educated counterparts in use of resources. However, the result is at variance with Ezeh *et al.* (2012) who reported negative relationship between educational level and output.

Farming experience: The coefficient of farming experience had positive and significant influence on inefficiency in broiler production. This is at variance with *a priori* expectations that farmers experience should have negative relationship with technical efficiency. Years of experience is expected to enhance a farmer's ability to understand and embrace innovations in order to improve technical efficiency, output and profit. The result disagrees with Ayerh (2015) who recorded negative sign on technical inefficiency but significant at 1% level of probability.

Household Size: The coefficient of household size exterted significant and negative influence on inefficiency in broiler production. This is in accordance with *a priori* expectations that household size should have positive effect on technical efficiency and negative on inefficiency. This implied that the broiler farmers with higher household size utilize their family labour advantage to impact positively on technical efficiency and profit. The findings is in consonance with Ocholi and Ayila (2018) who reported that household size has positive influence on technical efficiency in small-scale broiler production enterprises in Benue State, Nigeria. This means that large household size may utilized farm labour which helps in reducing direct labour cost thereby creating an avenue for improvement in technical efficiency in broiler production in Delta state. However, this result disagrees with the findings of Nwachukwu and Onyenweaku (2007), who found that household size increases technical inefficiency in broiler production.

Gender: The variable gender had positive impact and significant on technical inefficiency in broiler production. The positive relationship of gender with inefficiency is at variance with *apriori* expectation. This means that broiler production in the study area is not gender biased in favour of men. The reason could be that broiler production does not require highly energy for successful production. The result disagrees with Onyenwaku and Nwaru (2005) who reported men dominance in food production in Imo State due to high energy demanded of production operations.

Access to Credit: In the same manner, the *a priori* expectations are for access to credit to have a negative relationship with technical inefficiency based on proper utilization of accessed credit by the farmer. The significant and positive influence of access to credit is an indication that most broiler farmers do not access credit and cannot improve on profit margin leading to technical inefficiency. This finding is in consonance with the study by Ashagidigbi *et al.* (2011) which reported a positive

coefficient for access to credit in layer poultry production in Plateau State, Nigeria. Access to credit is expected to enhance broiler production level and embrace innovation in order to improve technical efficiency, output and profit.

The proportion of the error term which is attributed to inefficiency of the farm is determined by the variance parameter gamma (ϒ), which is normally represented as $\sigma u2=\sigma 2$. It ranges between zero and one. If ϒ=1, there is maximum efficiency, and if ϒ=0, there is complete inefficiency. The value of gamma for the farm (Table 5) is 0.77. This value signifies that 77% of the proportions of error term are attributed to farm inefficiency.

3.5 Elasticity of Production and Returns to Scale.

Returns to scale is the response of output to proportionate change in inputs. The returns to scale of broiler farmers in the study area was, therefore, calculated as the sum of individual elasticities of output with respect to farm size, labour, capital and feed which represented factors or farm specific characteristics that affected technical efficiency. Returns to scale is said to be constant, if the sum of input elasticities is equal to one ($\Sigma x_1=1$). This means that doubling the amount of inputs will double the output while tripling inputs will lead to tripling of output. Again , decreasing returns to scale obtains when increase in the amount of inputs leads to a less than proportion increase in output, i.e doubling of inputs leads to less than doubling of the quantity of output ($\Sigma x_1<1$). On the other hand, if the sum of input elasticities is greater than one ($\Sigma x_1>1$), there is increasing returns to scale meaning that, doubling of inputs will result in more than doubling of output.

The estimated coefficients of the broiler production inputs were determined using the Cobb-Douglas Stochastic frontier production function analysis. The values of the coefficient (Table 4.7) indicated the respective elasticities of farm size, labour, capital and feeds as 0.42, 0.13, 0.13, and 0.17 respectively. Returns to scale which is the sum of output elasticities of the production inputs as shown in Table 4.7 indicated decreasing returns to scale.

Table 3. Estimated output elasticity and return to scale for broiler production

Variable	Elasticity
Farm size	0.42
Labour	0.13
Capital	0.13
Feed	0.17
Total	0.85
RTS	Decreasing

Source: Computed from survey data, 2020. Note: RTS= Returns To Scale.

For elasticities of the production inputs, holding farm size, capital and feed constant, a one percent increase in labour led to 0.13% decrease in output. Likewise, holding labour, farm size and capital constant, a one percent increase in feeds gave rise to a 0.17% decrease in output. Similarly, a 1%

increase in capital gave rise to a 0.13% decrease in output. Similar scenario was obtained for farm size.

Furthermore, the decreasing returns to scale experienced by broiler farmers while holding fixed inputs constant would yield less corresponding output *cateris paribus.* The implication of the findings is that improvement of level of output among broiler farmers may not necessarily required increase in inputs in Delta State, Nigeria. Efforts should be tailored towards efficient utilizations of resources so as to attain optimum level of output and profit. This will enhance the farmers' net income.

3.6 Constraints to Broiler Production in Delta State.

Broiler production in the area was constrained by numerous factors such as feed cost, inadequate capital, high cost of labour, pests and diseases outbreak, and high mortality rate among others. Analysis of the constraints was achieved by comparing the calculated mean scores with the cut-off point (mean) of 2.50 obtained by using a 4-point Likert-type scale. Items with mean scores of 2.50 and above were regarded as constraining factors to broiler production while those below 2.50 were not seen as constraints. Again the calculated means were also ranked in order to determine the order of seriousness of the factors to production.

Table 4. Constraints to broiler production in Delta State.

Constraint	Mean score	Rank	Remark
High cost of feed	3.85	1st	Serious
Inadequate capital	3.44	2nd	Serious
High cost of labour	3.26	3rd	Serious
Parasites and disease outbreak	2.96	4th	Serious
High mortality rate	2.58	5th	Serious
Inadequate land	2.52	6th	Serious
Inadequate feeds	2.51	7th	Serious
Pilfering	2.41	8th	Not Serious
Shortage of water	1.98	9th	Not Serious

Source: Computed from field Survey data, 2020.

4 Conclusion

Broiler production is common and profitable in Delta State, Nigeria. This is evidenced by the positive values of gross margin, net farm income, mean net farm income and net return on investment obtained by the farmers. The farmers were also found to be efficient in production, though reasonable inefficiency gaps still exist. A lot of factors were identified to be militating against broiler production in the area, especially high cost of feeds. The identified constraints can be addressed through formulation and implementation of good policies such as provision of adequate extension services. This will enable availability of capital,, better skills, increase efficiency, profit and well fell of the farmers.

5 Recommendations

The following recommendations based on the findings of the study were made to raise policies geared towards improved broiler production in the area.

i. The study revealed that the production of broiler, a major source of protein in the area was profitable. To further improve the farmers profit margin and boost production, the Federal and State Governments should increase budgetary allocation to livestock production. This is to ensure the realization of their set goals, aimed at increasing the farmer's income and standard of living. The study also identified cost of feeds as the highest cost item in broiler production accounting for over half of total cost. Since the major reason for the scarcity and high cost of feeds is as a result of inadequate capital, and raw materials; government should subsidize the cost of raw materials for the production of feeds. Also, ensuring that there is availability of feeds to farmers.

ii. High cost of labour as revealed by the findings was a major constraint to production. This is as a result of the continued rural – urban drift of young and able bodied men, governments should provide requisite infrastructures such as power, roads, efficient telecommunication and other services in the rural areas to attract industries, create employment and reverse the drift.

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