

Research Paper

Financial ratio analysis and performance of two commercial poultry farms in Zamfara State, North-Western, Nigeria

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Received 30 January 2018; Accepted 26 March, 2018

The survey of the performance of two commercial poultry farms Rufai and Guruza farms in Zamfara State were carried out with the aim of assessing the profitability of the farms. The balance sheets and income statements were used to evaluate the financial position of the two farms. The findings of the study revealed that both farms were operating profitably. However, Rufai farm was less liquid than Guruza farm, both the farms are solvent, however, Rufai farm had more debts liabilities than the Guruza farm. The profitability ratios of the farms are within the normal range 0.24 and 0.53 for Guruza and Rufai respectively. Based on the Gross

ratio of the two farms the study revealed that Rufai has (0.04) while Guruza has (0.23), while based on the capital turnover ratio Rufai has (3.54) while Guruza (0.30) it was concluded that Rufai farm was more profitable than Guruza. However, it was concluded that commercial poultry farming was profitable venture and strategic tool for food security.

Keywords: Commercial poultry; performance; profitability and financial ratio

INTRODUCTION

Poultry is one of the world's major and fastest growing sources of meat and egg. Poultry has high quality animal protein derived from egg and other poultry products to meet the emerging demands of teeming population. Foods from animal origin have the capability of providing 35 g per capita of animal protein per day (Tijjani *et al*, 2012). Poultry is one of the main sectors where over 60% of animal protein is being derived. In Nigeria, over 90% of total share of the rural population are dependent on poultry for food and income (Almer-Klemesu and Maxwell, 2000; Udoh and Etim 2010). Yet Nigeria is insecure in terms of protein source from animals. Of the total recommended dietary requirement by Food and Agricultural Organization (FOA) put at 35g/day per capita (Adeyemi and Olayemi, 2006).

Due to the widespread protein energy requirement and deficits resulting from micronutrient malnutrition, the demand for animal source protein for food including milk,

meat, and eggs is massively increasing in Nigeria. Market failure and institutional imperfection affects the sector from performing effectively in serving as an engine for reducing malnutrition and poverty. The total poultry population in Nigeria rose from between 133-165 million in 2002 to about 200,000 million in 2011 (Federal Department of Livestock and Pest Control (FDLPC), 1991 and Akinwumi and Rich, 2010). However, over 90% of the figure was from the local poultry stocks which in turn composed of chicken (91%), guinea fowl (4%), duck (3%), turkey and others (2%) (Kperegbeji *et al.*, 2009).

Poultry production system evolves over time due to the prevailing conditions such as weather and institutional support in Nigeria while other factors include macro and micro economic, availability of appropriate education, support services, and market demand for products (Pica-Clamaraa and Otte, 2009). Commercial poultry systems are large scale operations utilizing capital intensive

equipment and technologies. These systems vertically integrate production, processing, hatchery, and feed mill functions into a self continued and independent system (Krger *et al.*, 2010; Tijjani *et al.*, 2012). Poultry are considered a means of livelihood and a way of achieving a certain level of economic independence in Nigeria (Udo and Etim, 2010; Etim *et al.*, 2010). The primary purpose of keeping poultry in all parts of the country is for both dietary and economic reasons (Ogundipe and Sanni, 2004). Today poultry keeping has developed from backyard business to commercially oriented industry. In fact, poultry production is unique in the sense that, it offers the highest turnover rate and the quickest returns to investment. Funds invested in poultry production are recovered faster than any livestock enterprise (Ogundipe and Sanni, 2004). The production cycle could be as short as four weeks for brooding, eight weeks for broiler production and 72 weeks from brooding to end of lay, (Ogundipe, and Sanni, 2004; Akinwunmi and Rich, 2010). Thus commercial poultry production gains momentum in the old Sokoto state comprising present Niger, Zamfara, Sokoto and Kebbi States in the late 70s as cushioning factor to the drought of 1973 where large population of livestock were lost. Then commercial poultry strains were first introduced to the region. Today poultry is a profitable business venture mainly developed in the urban and semi-urban areas where more inputs (feed, vaccines, and electricity) and output (product market) facilities are available (Olasunkanmi, 2008). However, commercial chicken production in Zamfara state is on the increase some years ago. Poultry meat and eggs are currently one of the cheapest available sources of animal protein for urban consumers (Anderson and Gugerty, 2010; Ebraheem *et al.*, 2012) commercial poultry has been recognized as one of the quick ways of rapid increase in animal protein supply and profitable.

Nevertheless, there are several ways to look at the profitability performance of business, depending on the type of analysis over a frame of selected time (Shaikh and Zala, 2011). Therefore, efficient management of poultry farm can make difference between profit and losses, even in years with unfavorable prices, and cost. Farm management involves more than just taking care of the biological processes. It rather pays attention to economic and financial measures of the farm business. This assists farm proprietors and managers to make an informed management decisions. This paper therefore assessed the profitability performance of two commercial poultry farms in Zamfara State, Nigeria.

Methodology

The study was conducted in Zamfara State of Nigeria, located on latitude 10° 40'-13° 40'N and longitudes 4° 30'-7° 06'E. Two farms were purposively selected based on the intensity of commercial poultry business.

The performance of the two farms were assessed and compared based on their financial statements respectively. Primary data were collected on the assets, liabilities, incomes, operations, sales and account records 2013/2014 farming session.

Description of the farms

Rufai farm

Rufai farm is located at Talata Mafara Local Government Area of Zamfara state. It is located 100 km from the state capital Gusau. The farm was stocked with 10,000 birds on 14th March 2003 and it has six workers, one animal health technologist and the farm manager. Two veterinary consultants and two guard men were also among the employees of the farm. The farm source its water from dug well and borehole which sourced its water by the use of electricity from standby generator and or from National grade, it also had a mini feed mill and 5 pens for housing the birds. The farm was mainly deep litter system of management which began to grow in size and improve in management system. Now the farm has about 200,000.00 birds and over 50 staff, with 3 locations at Gurbi, Bagaruwa and Lambar Bakura. The Gurbi and Lamba sections have battery cage system which is fully automated i.e feeding, watering, egg collection and litter movement. While the Bagaruwa section is deep litter system. The farm produces about 4,000 crates of eggs daily and for meat. The farm has depot at Abuja, Kano, Ilala, Gusau, Mafara and Sokoto. The farm is connected with national electric supply system and it has more than 20 boreholes of water system. The farm also has a standard modern feed mill and silo for storing grains.

Guruza farm

Guruza farm is in Gusau Local Government Area, the state capital of Zamfara State. Guruza farm started poultry business with only 1,500 pullets housed in a single block of 3 pens in 1999. Today, Guruza farm has 5 block comprising 14 pens with a total capacity of 20,000 birds. The farm also possesses a functional feed mill plant with a capacity to produce 5 tons of poultry feed in a shift, making total production of 10 tons of feed in a day. The farm currently produces all types feed for own consumption and for sale to the public. The sources of water for running the farm are from boreholes operated by electricity from stand by generator and National Power Supply (Power Holding Company of Nigeria).

Farm financial analysis

Based on balance sheets of the two farms the researcher

wishes to examine the performances of the two farms in the year 2013/2014. The aspects of the farm business analyzed are balance sheet, income statement and production record according to (Chikwendu, 1991).

Analysis of the balance sheet

According to Njoku (2002), the balance sheet gives a static view of the farms’ assets and liabilities at a point in time. It clearly shows assets of a farm and claims against those assets which reveals composition of assets and liabilities of the business. Balance sheet is simply a summary of financial resources of the farm at a particular point in times. A simple balance sheet may give indication as to the farms past performance. The primary source of data to calculate financial measures are the balance sheet and the income statement.

Income statement (profit and loss account)

The income statement shows how the resources of the farm have been employed within a given period of time normally at the end of the business year. It also revealed the result of the farm’s operations indicating how successful or unsuccessful the farm has been based on the resources employed within the year. The results of a successful operation is a not profit while unsuccessful operation records are not loss. Unlike balance sheet which gives a static view of the financial position of the farm, income statements shows how the various resources employed in operation of the farm have performed within the accounting period. In the process of arriving at profit made, information is provided on how much revenue was generated from various activities and expenses incurred. If the farms operations prove to be unprofitable, total expanse will exceeds total revenues and the difference is the loss (Ronald 1986; Njoku, 2002).

Ratio analysis

Aminu, (2005) stressed that ratio analysis of business enterprises centers on efforts geared towards deriving at qualitative measures or guides concerning expected capacity of the firm to meet with future financial obligations. The present and past data are used to adjust future performance. Rations are not ends to themselves but rather, to a selective basis that helps to answer significant questions. In financial analysis, financial ratios and efficiency ratios were used as an index or yardstick for evaluating the financial position of a firm. It is also an indicator for the strength and weakness of the firm or a project. The year-end balance sheet figures and other relevant data would be used to analyze the following models.

Specification of the model

Balance Sheet was computed using the following formulae:

Liquidity (Current Ratio)

$$CR = \frac{CA}{CL} \dots\dots\dots(1)$$

CR = Current Ratio
CA= Current Assets
CL = Current Liabilities

$$Solvency \quad \quad \quad \mathbf{NCR} = \frac{TA}{TL} \dots\dots\dots(2)$$

NCR = Net Capital Ratio
TA = Total Assets
TI = Total Liabilities

Leverage ratio

$$\mathbf{LR} = \frac{TL}{NW} \dots\dots\dots(3)$$

LR= Leverage Ratio
TI = Total Liabilities
NW = Net Worth

$$\mathbf{PTAR} = \frac{P}{TA} \dots\dots\dots(4)$$

PTAR =Profit Total Asset Ratio
P = Profit
TA = Total Assets

$$\mathbf{PRI} = \frac{RRC}{ACI} \dots\dots\dots(5)$$

RRI = Rate of Return to Naira Invested
RRC = Rate of Return on Capital
ACI = Average Capital Investments

$$RRE = \frac{RRC}{NW} \dots\dots\dots(6)$$

RRE = Rate of Returns of Equity
RRC = Rate of Returns on Capital
NW = Net Worth

$$CTR = \frac{GI}{ACI} \dots\dots\dots(7)$$

CTR = Capital Turn Over Ratio
GI = Gross Income
ACI = Average Capital Investment

$$OR = \frac{QE}{GI} \dots\dots\dots(8)$$

OR = Operating Ratio
OE = Operating Expenses
GI = Gross Income

$$GR = \frac{TFE}{GI} \dots\dots\dots(9)$$

GR = Gross Ratio
TFE = Total Fixed Expenses
GI = Gross Income

RESULTS AND DISCUSSION

$$FR = \frac{FC}{GI} \dots\dots\dots(10)$$

FR = Fixed ratio
 FC = Fixed Cost
 GI = Gross Income

Assets of Rufai and Guruza farms

Assets are those items which are owned by the farms (Subba and Subba, 1996). There are three types of assets, they include: current asset; intermediate or working asset; long-term or fixed assets. They can be converted into cash, within a short time, usually in one year (Tables 1 and 2).

Table 1. Balance sheet of Rufai farm as of July 2013-2014.

Assets		Liabilities	
Item	Value (₦)	Item	Value (₦)
i. Current Asset		i. Current liability	
Cash in Hand	750,000	Debts due for payment	14,016,000
Saving in Bank	8,000,000	Others	00.000
Total	8,750,000	Total	14,0160,000
ii. Working Assets		ii. Medium Term Liabilities	
Feed Produce in Store	2,000000	Debts due for payment in a year	00.00
Day Old Chicks	2,000000	Others	00.00
Gluc.Vit and Mineral	600,000		
Vaccines	828,000		
Total	5,428000	Total	00.00
iii. Fixed or Long Term Assets		iii. Long Term Liabilities	
Land	15,000000	Mortgages	140,000000
Building	32,000,000	long terms loan	00.000
Machinery and Equipment	100,000, 000		
Total	147,000,000	Total	140,000000
Total Assess (i+ii+iii)	161,178000	Total liabilities (i+ii+iii)	=₦ 154,016000
		Net worth =TA-TL	=₦ 161,17800-154016000
			7,162000
			154,016000+7,1620=₦ 161,78000

Table 2. Balance sheet of Guruza farm as from July 2013 -2014.

Assets		Liabilities	
Item	Value (₦)	Item	Value (₦)
i. Current Asset		i. Current liability	
Cash In Hand	150,000	Debts due for payment	276,000
Saving In Bank	1,500,000	Others	00.00
Total	1,650,000	Total	276,000
ii. Working Assets		ii. Medium term liabilities	
Feed Produce In Store	888,3000	Debts due for payment in a year	00.000
Day Old Chicks	300,000	Others	00.000
Gluc. Vit. and mineral	120,000		
Vaccines	138,000		
Total	1,446,300	Total	00.000
iii. Fixed Long Term Assets		iii Long Term Liabilities	
Land	40,000,000	Mortgages	00.000
Building	8,000,000	Long-terms loan	00.000
Machinery and Equipment	800,000		
Total	12,800,000	Total	00.000
Total Assets (i+ii+iii)	15,896300	Total Liabilities (i+ii+iii)	276,000
		Total liabilities + Net worth	276,000 +15,896,300 =₦ 161,73,300

Current assets of Rufai farm was N8, 750,000 while that of Guruza farm is N1, 65,000. This indicated that the

current assets of Rufai Farm are higher than that of Guruza farm because Rufai has more capital base than

Guruza farm coupled with fact that Rufai Farms is bigger in size with more facilities and manpower.

Working assets are assets that take two to five years to be converted into cash form (Subb *et al.*, 1996). Working assets of Rufai farm is worth N5, 428,000 while that of Guruza farm is N1, 446,300. This indicated that the working assets of Rufai farm is higher than that of Guruza farm because Rufai farm has a loan while Guruza farm obtained no loan. This could be attributed to the fact that Rufai farm had assets to tender as security or collateral for obtaining loans from commercial banks. While in the case of Guruza farm had fewer assets for collateral, hence the amount of loan it can obtain from the commercial banks is less. This is due to the fact that, the amount of loan offered by banks depends on the value of the assets that a borrower can offer for as collateral.

Fixed or long term assets are permanent or can be use continuously for more than a year (several years). It takes longer time to convert in to cash due to verification of records, legal transactions etc. Fixed or long term assets of Rufai farm was N147, 000,000 while that of Guruza farm was N12, 800,000. This indicated that Rufai Farm has higher fixed long-term assets compared to Guruza farm, which implies that Rufai farms may have longer life span.

Current liabilities are debts that must be paid in the short term or in very near future (Subba and Raghu 2004). The current liabilities of Rufai farm stood at N140, 16,000, while that of Guruza farm was N276, 000. This indicates that the current liabilities of Rufai Farm is higher/larger than the Guruza farm. This may attributed to the fact that Rufai farm secured a bigger loan that attracts interest servicing.

Medium term liabilities are loans that are due for payment within a period of two to five years. Medium term liabilities of both farms were zero. As for the Long term liabilities, Rufai Farm was found owing N140, 000.00 while Guruza farm did not. Net worth is the difference between the total assets and total liabilities of farm or when the total liabilities are subtracted from the total assets. However, if the total assets is greater than the total liabilities it is referred to net worth or equity and conversely is known as net deficit. The net worth of Rufai farm was N7, 162,000 while Guruza farm had N15, 620,300 therefore the net worth of Guruza farm is larger than the Rufai farm. This is because the total liabilities of Rufai Farm are larger than the Guruza farm. This indicated that if on the date the balance sheet is drawn up, when the assets of the farms were sold and all liabilities paid off, the Guruza farm would leave with a surplus higher than the Rufai Farm.

Performance measures of capital position

The balance sheet is the source of data for calculating the measures related to capital position of the farm

business. The financial or capital position of the farm analysis is designed to measure the solvency, liquidity and leverage of the business, not changes in net worth. It also helps in identifying the weaknesses in the structure or mix of the various types of assets and liabilities (Aminu, 2005).

Liquidity ratio of Rufai and Guruza farms

Liquidity ratio is the anticipated ability of a farm to meet current financial obligations as they become due using current resources. One of such liquidity ratio is the current ratio. However, according to Braganza (1990), the current ratio is a measure of business liquidity or the ability to meet short-term financial obligations from current assets. Table 3 revealed that, liquidity ratio of Rufai farm was less than one (0.62) while liquidity ratio of Guruza farm is (5.97) which implied that the Rufai farm business may face liquidity problem and also was losing control over the resources (Assets) due to the fact that there are high investment in Rufai farm that requires more time to mature for higher profits. While Guruza farm had more control over its resources because of the low investment undertaken, which is easy to dispose at any given moment.

Solvency ratio of Rufai and Guruza farms

Solvency of a farm business has to do with its equity and is concerned with what remains to the farmer if the business was to be sold off and all liabilities paid. It is related primarily to the ability to meet long run debts. Net worth (owners' equity) of a business is obtained when total liabilities are subtracted from the total assets. If the total assets exceed the total liabilities, the farms is said to be solvent. However, if liabilities exceed assets the business then is insolvent and as a result the business is said to be bankrupt. Solvency of a capital is also referred to as net capital ratio Okoli, (2007). However, according to Braganza (1990) and Jarrod (1971) the larger ratio/value are preferred to smaller ones, as they indicate a better choice of maintaining the solvency of the business should it ever be faced with a period of adverse economic conditions.

Solvency ratio

Table 3 revealed that the solvency ratio of Rufai farm is 1.04 kobo while Guruza farm is 57.50kobo. The finding implied that Guruza farm is more solvent than Rufai farms because it has high solvency ratio when compared with Rufai farms, this indicated that Guruza farm is safer than the Rufai farms in terms of financial stability.

This could be attributed to location factor of the two farms as Guruza farm is located in the city where market facilities and demand for meat and egg product are very high. In addition, Rufai farm had more manpower which may result to more expenses on the current and capital ratios, and also more liabilities to honor.

Leverage ratio of Rufai and Guruza farms

This measures the proportion of borrowed money relative to equity capital. It shows the extent to which the farm has been financed by borrowed money. Table 3 indicated that there was N21.50k N0.10 kobo debts for each N1 of equity for Rufai and Guruza farm respectively. The leverage ratio of Rufai farm is higher, which shows that, the farm was probably financed by borrowed money (funds), while Guruza farm the ratio is very low (less than one), it indicated that the farm was not financed by debts and the share of capital in Guruza farm is higher than the borrowed money (funds) hence Guruzu was unable to expand the business.

Table 3. Performance measures of capital position.

Variable	Farm	
	Rufai	Guruza
Liquidity Ratio	0.62	5.97
Solvency Ratio	1.04	57.50
Leverage Ratio	21.50	0.10

Income statement (profit and loss account) of the two farms

The income statement is a summary of expenditure and income of the farm business during the financial year. It aims at giving a clear picture of the performance of the farm. It is prepared at the end of each accounting year. The statement shows all the expenses or business debts on one hand and all receipts or business credits on the other. The primary purpose of an income statement is to determine business profit (Tables 4 and 5) (Subba, and Raghu, 2004). Current expenses of Rufai farm was N124, 008,000 while Guruza farm was N3, 801,000. Therefore the current expense of Rufai farm is larger than the Guruza farm. This was due to fact that Rufai farm has more birds than the Guruza farm, therefore, current expenses of Rufai farm is expected to be higher than the Guruza farm. Fixed expenses of Rufai farm was N19, 426,000 while that of Guruza farm was N5, 397,000. The fixed expense of Rufai farm is larger than the Guruza farm, which makes Guruza farm to have low taxes and had interest to be paid and their management expenses was low.

The total cash expenses of Rufai farm was N143, 424,000 while the expenses of Guruza farm was N5, 397,000. The total cash expenses of Rufai were higher than the Guruza farm this is because Rufai had more money and large number of birds than the Guruza farm. The egg sale in Rufai farm was N497, 724,000 while of Guruza farm was N6044800. This is because Rufai farm had large number of laying birds. Spend layer sales in Rufai stood up to N5, 250,000.00 while Guruza Farm was only N800, 000.00.

Net farm income

The Net farm income of Rufai farm during (2009-2010) was N359, 550,000.00 while that of Guruza farm was NFI = N1, 605,880 only. Rufai farm is expected to have higher NFI than Guruza farms, considering its large capital invested in the farm business than the Guruza farm. Rufai farm invested over N140, 000,000 while Guruza farm invested only N15, 000,000.00 at the beginning of their farm business year. Therefore, the higher the capital invested in the farm the more the expected profitability of the business. This finding corroborates of Olasunkanmi 2008 and Ebraheem *et al.*, 2012 that profitability of poultry enterprise is function of its size and capital invested.

Profitability ratio/financial test ratio

Profitability ratios can be used to determine the profit of the business. Some additional information is left untouched if the financial test ratio is not discussed, as it aids in supplement new information. These help the farmers themselves as well as lending institutions to obtain additional information on financial position of the business and at the same time helps in developing standard norms for the business (Kwoli, 2009).

Profit to total assets ratio of Rufai and Guruza farms

This is the process of obtaining profit over the total assets, and we want to find out where the profit is more than total assets or total assets are greater than the profit. Table 6 indicated that, the profit to total assets ratio of Rufai farm was 3.15 while that of Guruza farm was 0.44. This is shows that Rufai farm profit is more than four times fold than the total assets, while Guruza farm profit is less than the total assets. Therefore, this indicated that Rufai farm got more profit to total asset than the Guruza farm.

Rate of returns of naira invested of Rufai and Guruza farms

This ratio measures the profitability of investment of the

Table 4. Income statement Rufai farm as from July 2013.

Expenditure (Debt)		Income (Credit) (₦)	
Item	value (₦)		
Current expenses		Value (₦)	
Machinery and equipment	100,000000	Egg sale	
Casual labour	480,000	Egg sale	497724000.00
Livestock feed bout	1,500000	Total egg sale 497724000.00	
Day old chicks bought	2,000.000	Spend layer sale	
Medication	1,428000	Spend layer sale	5250,000.00
Wages/salary of staff	18,000.000	Total spend layer sale 5,250,000.00	
Supplies of farm produced	600,000		
Total current expenses	12400,8000		
Fixed expenses		Product for income consumption and gift	
Taxes paid	24,000		
Interest payment	13,992000		
Management expenses	5,400000		
Insurance payment	-		
Total fixed expenses	19,416000	Gross income = ₦ 502,974,000.00	
Total cash expenses			
Net cash income (NCI) = NFI	502,974000-143,424000	NFI = = ₦ 359,550,000.00	
	= 359,550,000.00		
Total expenditure	143,424000		

Table 5. Income statement of Guruza farm as from July 2013.

Expenditure (Debt)		Income (Credit)	
Item	value (₦)		
Current expenses		Value (₦)	
Machinery and equipment	800,0000.00	Egg sale	
Casual labour	72,000.00	Egg sale 6044800.00	
Livestock feed bout	355,320.00	Total egg sale 6044800.00	
Day old chicks bought	300,000.00	Spend layer sale	
Medication	258,000.00	Spend layer sale	800,000.00
Wages/salary of staff	1,836,000.00	Total spend layer sale 800,000.00	
Supplies of farm produced	180,000.00		
Total current expenses	3,801000.00		
Fixed expenses		Product for income consumption and gift	
Taxes paid	9,600.00		
Interest payment	-		
Management expenses	-		
Insurance payment	1,500,000.00		
Total fixed expenses	1,596000.00		
Total cash expenses	5,238920.00	Gross income = 6,844800.00	
Net cash income	6844800-5,238,320		
(NCI) = NCI	=1,605,880		
Total expenditure	5,238920.00	NFI = 1,605,880	

farm business. Table 6 shows that Rufai farms rate of returns to money (Naira) invested, and for every invested there was 3.37 while Guruza farm was 0.67. The high

ratio for Rufai farm might not be unconnected to huge capital investment of money than the Guruza farm. That is why the ratio of Rufai farm is higher than the Guruza farm.

Table 6. Profitability ratio/financial test ratio

Variable	Farm	
	Rufai	Guruza
Profit to total assets ratio	3.15	0.14
Rate of return to naira Invested	3.37	0.67
Rate of return on equity	67.5	0.23
Operation ratio	0.24	0.53
Gross ratio	0.04	0.23
Capital turnover ratio	3.54	0.30
Fixed ratio	0.04	0.23

Rate of returns on equity of Rufai and Guruza farms

Table 6 shows that the rate of returns on equity of Rufai farm was 67.5 while that of Guruza farm was only 0.23. This implied that Rufai farm ratio is larger than that of Guruza farm. The larger ratio of Rufai farm can be attributed to the fact that, majority of the money and properties of the Guruza farm were borrowed and there were more debts for the farm to settle. On the other hand, for the Guruza farm, the majority of money and properties belongs to the farm business and there was no much loan/debts owed to the business.

Operating ratio of Rufai and Guruza farms

This ratio indicated that the proportion of gross income that goes into the payment of operating cost, it also indicate the ability of business to survive, ratio greater than one is desirable (Table 6), the operating ratio of Rufai farm was 0.24, and Guruza farm was 0.53, this indicated that both the farms are operating at profit since a ratio of less than one is desirable. But Rufai farm is more profitable than the Guruza farm due to larger operating ratio accrued.

Gross ratio of Rufai and Guruza farm

The gross ratio shown in (Table 6) of the findings revealed that Rufai farm had a gross ratio of 0.04 while Guruza farm has 0.23. This indicated that total fixed expenses of Rufai farm over the gross income is more profitable when compare to Guruza farm. This might be as a result of economy of scale exhibited in Rufai farms. Based on this analysis Rufai Farm business was more profitable than the Guruza farm due to lower gross ratio of Guruza farm.

Capital turnover ratio of Rufai and Guruza farms

This ratio gives the gross income obtained for each naira of capital invested over the year. This ratio also indicates the share of capital invested in relation to the gross farm

income.

Table 6 indicates that only 36% of the invested capital in Rufai farm is from the gross income, while 10 % of the invested capital of Guruza farm is from the gross income. This is because Rufai farm obtained loan when compared to Guruza farm that didn't, therefore some share of the income may be used to pay the loan and services.

Fixed ratio of Rufai and Guruza farms

The fixed ratio shows the proportion of fixed cost, lower ratio is desirable. The ratio indicates the relationship between fixed expenses and gross income. Table 6 shows that, fixed ratio of Rufai farm was 0.04 while Guruza farm was 0.23. Therefore, both the farms operated at profit, but Rufai farm is more profitable than Guruza farm because of high fixed cost and gross income than Guruza farm and Rufai farm has higher capital invested in fixed cost than the Guruza farm.

Conclusion

Based on these research findings on the two farms, it could be concluded that commercial poultry production was profitable venture, if efficiently managed and maintained. The findings also revealed that Rufai farm is more profitable due to the high investment on equipment, number of birds, land size and capital base. Thus, size of investment is an important factor in determining the profitability of an investor due to economics of scale on the production inputs.

Recommendations

Based on the findings of this study, the following recommendations were made:

- Poultry production holds promise in poverty reduction and food security improvement, therefore, should be support by policy makers.
- Government and non-governmental organizations should advance soft loan to the interested poultry farmers at low interest rate and at friendly repayment terms.

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