Scientific Papers Series Management, Economic Engineering in Agriculture and Rural Development
Vol. 21, Issue 4, 2021
PRINT ISSN 2284-7995, E-ISSN 2285-3952

PROFITABILITY AND HINDRANCE OF GOAT PRODUCTION AMONG RURAL HOUSEHOLDS IN NIGERIA: PERSPECTIVES OF NIGER DELTA AREA

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Abstract

The specific objective was to evaluate goat farming profitability. The 240 samples were drawn using structured technique. Data were evaluated using descriptive statistics and profitability model analysis (cost and returns analysis). A moderate family size of 10 persons and average age of 48 years educational level were dominant. Most farmers were well-experienced with low flock size of 12 goats averagely. Extensive management system were adopted and most respondents engaged in cassava production in addition to goat farming. The average revenue derived from goat farming was ₦384,000 ($929.78) with total cost of farming of ₦299,990 ($734.02). The benefit-cost-ratio of 1.3 was achieved revealing 30% profitability. Lack of credits were most hindrance of farmers. The study recommended farmers credit provision for increase in goat production.

Key words**:** *goat, production, profitability, rural-household*

INTRODUCTION

The earliest or oldest species domesticated were goats mostly used for slain, hair, milk and meat in most areas globally [2]. Also [6] reported that goat are known primarily for meat, milk, hairs and dungs serves as fuel. Goat play a pivot role of providing rural households with employment, food security, income reducing unexpected risk in farming thereby providing socio-economic empowerment [13]. Goat has varied water consumption pattern, kidding is short, housing demand is shorter, high level of multiple births and hardiness to environmental shock that makes it fit into rural sector for economy boost [7].

The major problem of Nigeria growing population is lack of protein intake [12]. The fundamental problem encountered in Nigeria is inadequate protein intake resulting to malnutrition probably due to poverty ravaging the country [1]. Stated that one of the problems that is prevalent in Nigeria resulting to malnutrition is declining protein intake mostly from food and animal sources. Among sources of supplier of protein in Nigeria, goat feature predominantly accounting for approximately 34.5 million, cattle are 13.9 million and sheep are 22.1 million [8]. Goat meat is a good source of animal protein in Nigeria as mostly consumed by all without religious taboo. This study concentrated on goat profitability as literatures revealed that less work have been done in this area.

MATERIALS AND METHODS

The objectives of the research work were to determine the socio-economic characteristics of goat farmers, examine goat production management systems, examine farming enterprise of goat farmers, determine goat farmers mean annual revenue, evaluate goat farmers mean annual cost of production, analyse profitability of goat production and; examine goat farmers' hindrances

The survey put into focus the Niger Delta area in representation of the entire Nigeria goat production. The area is composed of nine local government areas that mostly engaged in Agricultural production for their livelihood. The area is blessed with crude oil which is the -essential mineral resources of Nigeria that earn the country her foreign exchange. It has an overall population of 5,198,605 persons

[9]. Most crops grown in the area were cassava, maize and yam in addition to fisheries and livestock production [4].

The sampling procedure adopted was multi-stage in chosen randomly 240 goat farmers. Firstly, five states were chosen randomly from the nine existed states. Secondly, four local government areas (LGAs) each were chosen randomly given a total of 20 LGAS. Thirdly, four rural communities each were chosen randomly amounting to 80 rural communities and lastly, three goat farmers each were chosen randomly giving a total of 240 respondents.

Data were gotten with assistance of structured questionnaires administered to goat farmers. Data were analysed with the aid of descriptive statistics and cost return analysis

Model Specifications

Descriptive statistics

$$\text{Mean } (\bar{X}) = \frac{\Sigma fx}{F} \text{ …….....(1)}$$

Profitability Model Analysis (Cost and returns analysis):

TCg = TVCg + TFCg …….....(2)

GMg = TRg – TVCg …….....(3)

NRg = GMg – TFCg …….....(4)

BCRg = TRg/TCg …….....(5)

where:
Σ = Summation sign
f = Frequency
x = Class mark
TRg = Total revenue from goat production
TCg = Total cost of goat production
TVCg = Total variable cost of goat production
TFCg = Total fixed cost of goat production
GMg = Gross margin of goat production
NRg = Net returns of goat production
BCR = Benefit Cost ratio of goat production.

RESULTS AND DISCUSSIONS

Socio-economics characteristics of goat farmers. The parameters in Table 1 stipulated household size of 10 persons averagely with a mean age of 48 years that were mostly married engaging in goat production. Most respondents were well experienced in goat farming having 20 years of farming experience with low educational qualification of primary school (42.9%) that were mostly carried out by female gender. The goat size were relatively low having a mean size of flock of 12 goats and most farmers engaged on goat farming on part-time basis.

Table 1. Socio-economic characteristics of Goat Farmers (n = 240)

Socio-economic characteristics	Frequency	Percentage (%)	Mean/ Mode
Age in years			
26 – 35	32	13.3	
36 – 45	61	25.4	
46 – 55	78	32.5	48 years
56 – 65	69	28.8	
Gender			
Male	87	36.3	Female
Female	153	63.7	
Family Size (persons)			
3 – 5	28	11.7	
6 – 8	53	22.1	
9 – 11	71	29.6	
12 – 14	65	27.1	10
15 – 17	23	9.5	persons
Farming Status			
Part-time	231	96.2	Part-time
Full-time	9	3.8	
Marital Level			
Married	114	47.5	
Single	24	10.0	
Widow	53	22.1	Married
Divorced	49	20.4	
Educational status			
Primary school			
Secondary school	103	42.9	Primary school
Tertiary school	91	37.9	
	46	19.2	
Farming Experience (years)			
1 – 11	47	19.6	
12 – 22	94	39.2	20 years
23 – 33	74	30.8	
34 – 44	25	10.4	
Flock size (number)			
1 – 7	77	32.1	
8 – 14	95	39.6	12 goats
15 – 21	52	21.7	
22 – 28	16	6.6	

Source: Field Survey data.

These reports were similar with the assertion of [3] that most livestock farmers were with low educational qualification that were mostly

aged with moderate family size of 9 persons engaging in livestock farming on part-time basis.

Goat production management system. Most respondents as indicated in Table 2 practice semi-intensive system of management (58.3%) while others practice intensive system (36.3%) and extensive system (5.4%) which was the least practiced. This report was confirmed by [11] that three management systems namely extensive, semi-intensive and intensive systems existed in Nigeria and most commonly used was semi-intensive system.

Table 2. Goat production management systems

Management system	Frequency	Percentage	Mode
Semi-intensive system	140	58.3	Semi-intensive
Intensive system	87	36.3	
Extensive system	13	5.4	

Source: Field Survey data.

Farming enterprises of goat farmers. The variables in Table 3 revealed that farming enterprises engaged by goat farmers were fisheries (8.2%), cassava (17.4%), yam (15.5%), maize (14.4%), vegetables (9.4%), goat (7.3%), sheep (7.4%), cattle (0.8%), pig (6.6%) and poultry (13.0%) production. Most respondents engaged in cassava production since cassava product (garri) is a stable food for most Nigerian.

Table 3. Farming enterprises of Goat farmers

Variable	Frequency	Percentage	Mode
Fisheries	108	8.2	Cassava Production
Cassava	229	17.4	
Yam	203	15.5	
Maize	189	14.4	
Vegetables	123	9.4	
Goat	96	7.3	
Sheep	97	7.4	
Cattle	11	0.8	
Pig	86	6.6	
Poultry	170	13.0	

Source: Field data. Multiple responses observed.

Goat farmers mean annual revenue (Naira). The parameter in Table 4 showed that mean production capacity were 12 goats which indicated low production capacity of goat production. The mean rate per goat was ₦32,000 amounting to ₦384,000 ($929.78) mean revenue per animal.

Table 4. Goat farmers mean annual revenue (Naira)

Variable	Mean	Amount (₦)
Quantity (Goat)	12	
Rate per goat (Naira)	32,000	
Total Revenue (Naira)		384,000

Source: Field Survey data.

Goat farmers mean annual cost of production. The information in Table 5 shown that expenditure were in purchase of young goats (kids), feeds, medication/disinfectants, labour and transportation which made up the total variable cost of ₦285,000 while loan interest, tools depreciation and rent on land made up the total fixed cost (₦5,990) incurred in goat production. The total expenditure (cost) incurred was ₦299,990 ($734.02). It was observed that most expenditure were in purchase of young goats (₦168,000) and feeds (₦90,000). [5] agreed with the research in his work in Ekiti State, where total revenue for goat farming was huge and encouraging.

Table 5. Goat farmers mean annual cost of production

	Rate (₦)	Amount (₦)
Variable Cost (12 goats)		
Purchase of young goats (12 kids)	14,000	168,000
Feeds (60 bags)	1,500	90,000
Medication/Disinfectants		16,000
Labour		8,000
Transportation		3,000
Total Variable Cost (TVCg)		**285,000**
Fixed Cost		
Interest on loan		1,490
Depreciation on tools		2,100
Land rent		2,400
Total fixed cost (TFCg)		**5,990**
Total Cost (TCg)		**290,990**

Source: Computed from field data.

Profitability of goat production. The information in Table 6 stipulates that the total revenue and total cost of goat production was ₦384,000 ($929.78) and ₦290,990 ($734.02) respectively. The goat production gross margin and net returns was ₦99,000 and ₦93,010 respectively. These figures reveals that goat production was profitable business. The business benefit-cost-ratio was 1.3 which clearly indicates 30% profitability, also shown that 30k will be made for every one naira committed into the business, this also indicates business profit. This implies that

goat farming is a good source of additional income to rural households. This assertion is supported by [14] that goat farming contributed substantially to rural farmers' income in Jammu and Kashmir, India.

Table 6. Profitability of goat production

	Amount (₦)
Total Revenue (TRg)	384,000
Total Variable Cost (TVCg)	285,000
Total Fixed Cost (TFCg)	5,990
Total Cost (TCg)	290,990
Gross Margin (GMg) = TRg – TVCg	99,000
Net Returns (NRg) = GMg – TFCg	93,010
Benefit-Cost-Ratio = TRg/TCg	1.3

Source: Computed from field data.

Goat farmers' hindrances. The parameters in Table 7 showed that farmers' hindrances were lack of fund (20.0%), price fluctuation (14.9%), and high cost of feeds (17.6%), grass unavailability (19.8%), theft (9.1%) and lack of extension agents (18.6%). Most goat farmers experienced lack of fund and grass unavailability to feed the animals especially in the dry season as a major hindrances. This assertion was confirmed with [10] that major challenges of goat production were finance, price fluctuation, market seasonality, theft and expensive medication in Oyo State.

Table 7. Goat farmers Hindrances

Parameter	**Frequency**	**Percentage**
Lack of fund	231	20.0
Price fluctuation	172	14.9
High cost of feeds	203	17.6
Grass unavailability	229	19.8
Theft	105	9.1
Lack of extension agents	214	18.6

Source: Field data. Multiple responses observed.

CONCLUSIONS

The study revealed moderate family size of 10 persons and a mean age of 48 years that were mostly married engaging in goat farming. Most respondents were with low educational level of primary school that were experienced in goat farming engaging on part-time basis. The sizes of flock were relatively low which were mostly carried out by females. Extensive system of goat management were mostly adopted. Most respondents engaged in cassava production in addition to goat production. The average revenue derived from goat farming was ₦384,000 ($929.78) with total cost of production of ₦299,990 ($734.02). The benefit-cost-ratio of goat production was 1.3 revealing 30% profitability. Most goat farmers' hindrance was lack of fund and animal grass unavailability. The study recommended provision of credits to goat farmers to increase their flocks for higher productivity.

ACKNOWLEDGEMENTS

My appreciations to community leaders for their support and cooperation in course of this study.

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