THE ECONOMICS OF GOAT PRODUCTION IN SOUTHEASTERN NIGERIA: IMPLICATIONS FOR THE FUTURE

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ABSTRACT

The West African Dwarf goat is indigenous to Southeastern Nigeria and is raised by many families under small-scale and intensive management systems. Results showed that the average households kept 6 goats, but that expansion was limited by labour and feed procurement problems. Both males and females owned goats but males dominated goat marketing. Women have recently become goat meat retailers. Although the prospects for large scale goat production appeared bleak, those for women producers integrating vertically forward into marketing appeared favourable.

Key Words: Southeastern Nigeria; Goat Production; Goat Marketing

INTRODUCTION

Southeastern (SE) Nigeria comprises the seven states of Abia, Akwa-Ibom, Anambra, Cross River, Enugu, Imo and Rivers. It lies between longitudes 6° and 9°E and latitudes 4° and 7°N, and occupies a land area of about 78,612km² (Okoli *et al.*, 1995). With a population of 18,921,872 people, SE Nigeria has an average man-land ratio of 241 people per km², compared to 96 for the country as a whole, i.e. 2.5 times the national population density. Igbos, Efiks, Ijaws, Ibibios, and Anangs are the major ethnic groups in the area with christianity the dominant religion and farming the main occupation.

In 1989, there were 526.5 million goats in the world with 94% of them produced in the developing countries (Husnain *et al.*, 1991). Thus, the developing countries are more involved in goat production. In SE Nigeria, among other livestock, there were 4.6 million goats as compared to 2.06 million sheep and

only 84,000 heads of cattle (Okoli *et al.*, 1995). These figures indicate the importance of goats over other small and large ruminants in the area.

Goats, all over the world, are reared for their meat, milk, skin, fur and manure. Although goats are generally known as relatively poor converters of feed into meat, the frequent occurrence of twins and even triplets is an encouraging feature in goat breeding for meat production. Nevertheless, developed countries instead lay emphasis (when at all they are interested) on milk (e.g. Saanen, British Alpine breed), or fur (Angora breed) production by specialized goat breeds. Goat meat therefore, becomes a by-product in these countries where enough animal protein is supplied to the population through specialized meat breeds of cattle and pigs supplemented with a tremendous poultry industry.

In the developing countries, in general, daily animal protein is below the Food and Agricultural Organization (FAO) standard of 25 g. In Nigeria, this amounts to only 10 g per day (FAO, 1985). There is thus a pressing need to increase domestic meat production through rapid multiplication and better management of indigenous meat animals. The West African Dwarf (WAD) goat is indigenous to SE Nigeria. Although non-indigenous goat breeds from the northern parts of Nigeria are sold, slaughtered, and eaten in this area, they are not normally reared here under household management, as the WAD goats are, but are normally transported to SE Nigeria in lorries, trains and on hooves.

Animal scientists and other researchers concerned about increasing animal protein intake in SE Nigeria should seek solutions

compatible with the socio-cultural and economic make-up of the people. The study is primarily concerned with the WAD goat as a possible strategy for increasing meat production in parts of SE Nigeria because of its adaption to the area. In general, the study aimed at ascertaining and examining the status quo with the possibility of deriving future implications. The specific objectives of this study were to:

- ascertain the socio-economic characteristics of goat producers and marketers;
- ascertain the place of goats in the life of the people of SE Nigeria;
- determine the management practices currently being used in goat production in the area;
- ascertain the profitability of goat production in the area;
- examine the marketing channels for goat;
- identify the problems facing goat production and marketing; and
- derive policy implications based on findings.

MATERIALS AND METHODS

One Local Government Area (LGA) was randomly selected from Enugu, Anambra and Imo States which are highly populated areas of SE Nigeria and on which primary emphasis was laid. In each LGA, five communities were randomly selected and from each community, 10 goat producers were selected and interviewed, i.e. 150 goat producers in total. Also, from each LGA, five important markets were determined during the survey and 10 goat sellers were selected from each of the markets i.e., 150 goat sellers as a whole. These respondents were interviewed using two sets of pretested questionnaires, one for the producers and the other for the sellers.

RESULTS AND DISCUSSION

Socio-Economic Characteristics of Goat Producers and Marketers

Age

The modal age range of goat producers was 41 - 50 years, whereas that of the sellers was 31 - 40 years (Table 1). About, 73% of the producers were more than 40 years old, while 52% of the sellers were in the same age bracket.

TABLE 1: AGE DISTRIBUTION OF GOAT PRODUCERS AND SELLERS

Age (Years)	Producers (%)	Sellers (%)
20 or less	0.7	0.7
21 - 30	3.3	7.3
31 - 40	23.3	40.0
41 - 50	43.3	34.7
51 - 60	18.3	10.0
More than 60	10.7	7.3
Total	100.0	100.0

This shows that goat production is an adult business in SE Nigeria. However, the sellers are relatively younger than the producers. It is good that the younger generation is interested in goat marketing but it is important that they also get involved in the production sector, to make it more energetic and ambitious, since age has a debilitating effect on the adoption of new technologies.

Sex

Fifty-two percent of the producers were males, while 48% were females. However, 90% of the sellers were males and only 10% were females.

This shows that the goat selling business was almost entirely dominated by men while women played a significant role in production. Women have always participated in goat production as goat owners and/or in the feeding and securing of goats (Ajala, 1995). However, recently, women have started selling fresh goat meat in the market as butchers. This is a welcome development as it raises the possibility of these women vertically integrating backwards from goat meat retailing to small-scale goat production. Such a small-scale operation could be economically

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rewarding for the women, but may not be for the men who are traditionally, the bread winners of the family, and hence require larger incomes to sustain their needs.

Marital Status

A significantly large proportion of the goat producers, 80%, were married compared to 59% for the goat marketers. Thus, while goat production was obviously an activity of married people, a large proportion of unmarried people, 41%, took part in goat marketing.

Level of Education

Results show that 25% of the producers and 28% of the marketers had no formal education (Table 2). However, 39% of the marketers and 31% of the producers had secondary education or more. This means that most of the goat producers and sellers had only some years of primary education or less. For the purpose of adopting new technologies, education is an important factor. However, in the goat industry this is lacking and will impact adversely on future goat production and marketing. Therefore, a lot of informal and adult education are needed for them.

TABLE 2: EDUCATIONAL LEVEL OF GOAT PRODUCERS AND MARKETERS

Education	% of Producers	% of Marketers
No formal education	25.3	27.7
Primary	44.0	33.1
Secondary	15.3	27.7
Above Secondary	15.3	11.5
Total	100.0	100.0

Goat Production as an Occupation

About 60% of the goat producers were part-time farmers, while the rest (40%) were full-time farmers. However, even among the full-time farmers none was a full-time goat rearer. Put differently, goat production was essentially a part-time activity. The average number of goats kept in the area was six. The

number appeared to be too small for any commercially oriented full-time venture. It would be beneficial to find out in future whether this part-time nature of goat production determined the average number of goats kept, or vice versa.

The Place of Goats in the Life of the People

The primary reason for keeping goats given by 81.3% of the respondents was to raise emergency cash (Table 3). The goats served as "savings accounts" for their keepers. These "deposits" were withdrawn (i.e. the goats were sold) mainly, in times of emergency, for example, when large lump-sums were required for children's school fees, hospital bills, buying of women's group uniforms etc.

TABLE 3: REASONS FOR KEEPING GOATS

Reason	%*
Emergency cash	81.3
Consumption	30.1
A way of life	23.3
Prestige	14.7
Festivals (e.g Christmas, Easter, Omaba)	30.1
Ceremonies (Marriage, Burial, Title taking, Naming etc.)	44.0

* Adds to more than 100% because of multiple answers.

Goats were also important concomitants of ceremonies and festivals, which were integral aspects of the lives of the people. Although goats were kept for consumption by 30% of the respondents, this activity occurred mainly during ceremonies (e.g. marriages and burials) and festivals. It was quite unusual for households to slaughter goats just because they lacked meat. Thus, for goat producers, goat meat was only a marginal way of raising the animal protein intake of their families since goats were infrequently slaughtered (an average of one-to-two goats per year). For goat producers to be encouraged to consume more of their product, it would be necessary to

increase the herd size, and/or increase the reproduction rate. Both of these possibilities have serious constraints.

Management Practices in Goat Production

Acquisition of stock

The majority of goat keepers, 75%, purchased their parent stock (Table 4), and the herd then grew through births (kidding). However, the practice of goat leasing (caretaking) was used by 26% of the respondents to enter the goat production industry. This practice reduced the initial costs of entering the goat enterprise to those of feeding, housing and care. Different leasing arrangements prevailed with the most common being the situation where the lessor (owner) had title to the initial stock but shared the kids in a rotational fashion, while the lessee (keeper) supplied the feed, labour, housing

TABLE 4: MODES OF ACQUISITION OF GOATS IN THE AREA

Mode	%*
Purchase	75.3
Gift	10.7
Caretaking (leasing)	26.0
Born of stock	34.7

*Adds to more than 100% because of multiple answers.

and care.

The choice of initial stock was influenced mainly by the animal's fertility, especially, twinning ability (72%) and mothering ability (72%). These required that foundation stocks were obtained from source(s) well known to the purchaser, since no outstanding strain of WAD goats with proven economic potentials were available in the market place.

Size of Operation

Results showed that the goat enterprise was a small-scale business. Most producers, 75%, started with 1 to 2 goats (Table 5) but the average number of goats kept when the enterprise had stabilized was six, comprising

four does and two bucks. Children and the male farmers provided most of the forages for the goats with the females playing supplemental roles. Thus, the goatry was essentially a part-time, small-scale, family

TABLE 5: INITIAL SIZE OF OPERATION

Number of Goats	%
1 - 2	74.7
3 - 4	15.3
5 - 6	4.7
7 - 8	5.3
Total	100.0

enterprise.

The challenge for animal scientists, economists and policy makers is how to commercialize the goat enterprise so as to attract full-time goat rearers and/or enable the part-time goat rearers to expand their production.

Management Systems

The dominant system of goat rearing was that of permanent confinement, 78%, followed by partial confinement of tethering, 20%. A small minority, 2%, still practised the extensive system, where goats roamed about and fended for themselves. This system was banned in most communities, especially during the farming period because of the destructive nature of goats to crops.

The favoured systems of management are labour intensive. Labour is required to cut and carry fodder, as well as for tethering the animals and bringing them back in the evening each day. Most of the labour is provided by the farmer, his wife, and children. However, increased monetisation of the rural economy has encouraged housewives to undertake income generating ventures like petty trading, dress making, hair plaiting and dressing, and cake/snacks making. These activities mean that these women are no longer available for such traditional chores as cutting and carrying fodder for the goats. Also, increased attention given to children's education and after-school

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lessons have left the children with little free period to attend to the goats. In the absence of regular supply of unpaid family labour, one of the constraints to increasing the size of goat herds is feed supply. This is normally accomplished by either taking the goats to the feeds or bringing the feeds to the goats (either of which requires labour).

Animal scientists must find a way of packaging goat feeds in such a way that they can be obtained conveniently and in bulk to enable producers to increase their herd size - as the poultry nutritionists have done. Proposals that will require additional labour and land which are in short supply, such as fodder banks and alley cropping may meet with minimal acceptance.

Profitability of Goat Production

Analysing the profitability of the goat enterprise under the management system used by small-scale farmers is a difficult task mostly because little written records are kept and many of the costs are imputed rather than actual. For example, the cost of family labour is imputed since family members are not paid, the forage and kitchen wastes are free, while the goat houses are often extensions of kitchens, stores, and other buildings, or are built with scraps. However, economists

TABLE 6: ENTERPRISE BUDGET PER ANNUM FOR THE AVERAGE GOAT FARMER USING THE INTENSIVE SYSTEM (SELLS 6 GOATS PER YEAR)

Item	Amount (N)
Revenue	₦1,685.80
Total Variable Costs	
Veterinary Service	96.22
Traditional Medicine	11.10
Ropes	36.84
Transportation	39.22
Repairs of Shelter	18.50
Opening of Stock	300.00
Interest Opportunity Cost (10%)	50.25
Total Variable Costs	552.71
Gross Margin	₦1,132.29*

(Eighty Naira equals one US dollar)

believe that resources have opportunity costs which must be included before profit is declared.

Consequently, the gross margin concept was applied here, i.e. income above variable costs (Table 6).

Table 6 shows that the average goat farmer earned a gross margin of ₦1,132.29 (₦80 = 1 US dollar). Put differently one naira invested in goatry earned ₦2.05 in gross margin. However, because the average number of goats kept was rather small, and all costs had not been accounted for, this gross income was insufficient to keep a man fully occupied. Therefore, unless the average number of goats kept is drastically increased, the commercialization of the goat enterprise would be impracticable, and goat meat would continue to be a marginal source of animal protein.

Marketing Channels for Goats

Most producers brought their goats to the local markets for sale. On the average each producer brought 1 to 2 goats at anyone time. About 44% of the sales were producer to final consumer, 52% were producer to butcher/retailer to final consumer, while 4% were producer to wholesaler/itinerant sellers to retailer or final consumer (Figure 1). Sales were rarely made at the farm gate.

Figure 1: Marketing channels for goats

The markets operated every four or eight days (except Sundays). Buyers normally exceeded sellers during important religious

ceremonies (e.g. Christmas, and local traditional religious festivals), but at most times sellers out-numbered buyers. The goats were brought to the market on hooves, bicycles and motorcycles. Goats were not weighed nor were there standardized measures. However, prices were affected by the sex, size, appearance of the goats, and the bargaining powers of buyers and sellers.

The section of the market where live goats were sold was usually not covered. Thus, sellers and animals spent long hours in the market unsheltered. Unsold animals, at the end of the market day (usually 5 to 6 p.m.), were returned 'home' the way they came and brought back to the market during the next market day (4 or 8 days later), until sold. The few itinerant sellers moved from market to market buying and selling their goats depending on the prevalent price.

Problems of Goat Production and Marketing

All the producers (100%) complained that there were no available outstanding strains of WAD goats that they could easily purchase from the market as were the cases with improved cassava varieties, broilers and layers (Table 7). Consequently, producers relied on guess work in the market place, and personal knowledge of neighbours' goats in order to purchase goats with twinning and mothering abilities.

TABLE 7: MAJOR PROBLEMS OF GOAT PRODUCERS

Problems	Percentage of Respondents*
Lack of recommended strains of WAD goats	100
Difficulty in procuring goat feeds	80
Diseases (pneumonia, diarrhoea)	70
Death (from eating wrong leaves)	50
Fluctuating market prices	50

* Adds to more than 100% because of multiple answers.

Next in importance was difficulty in procuring goat feeds (80%). In areas experiencing rapid urbanization, wild forages were being pushed farther away from the living houses. As a result obtaining goat feeds had become a time consuming and labourious task. Furthermore, the education of children meant that they were only available after school and 'private tutorial' hours for household chores, which included fetching firewood and water, cooking, farm work, cleaning the house and collecting goat fodder. These chores competed with each other for the children's limited time. Often it was the goat that bore the brunt and was fed mostly kitchen wastes and forages/leaves found around the house, e.g. palm fronds.

This problem of feeding and caring for the goats was the reason given by 90% of the rearers for restricting the number of goats kept at any period. This problem was also reported by Ajala (1995). Other problems reported by goat keepers included diseases (70%), particularly diarrhoea and pneumonia, and death from eating poisonous leaves (50%).

Goat producers and marketers regarded fluctuating market prices as problematic. This agrees with the findings of Ajala (1995). The wide fluctuation in prices was due to the demand pattern for goats. In fact, goats were mostly demanded during important cultural and religious festivals like Christmas, New Year, and local deities. During these periods, goat prices peaked, but fell soon after. Also, because of current economic hardships in Nigeria, most families could no longer purchase goats. Hence, supply often exceeded demand, thereby putting a downward pressure on price.

These price fluctuations and supply pressures were further exacerbated by the presence of a large numbers of northern goat breeds in the market at relatively lower prices, the increased acceptance, by the people in the area of turkeys, and chickens as alternative gift items during festivals, and the gradual acceptance of northern goat breeds and rams

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in traditional marriage and burial ceremonies.

IMPLICATIONS FOR THE FUTURE

Goat production and marketing in southern Nigeria are mainly a family affair, sustained generally for two major reasons: a steady supply of cash when needed and an availability of animals for familiar ceremonies. Adult married men and women participate in production while men mostly take care of the marketing of goats, children's help being almost unavailable producers and marketers have low levels of education and goat production appears to be a part-time business. Consequently, the major problems facing goat production and marketing in this area are centred on lack of a recommended strain of WAD goat to use as parent stock, feeding difficulty, disease prevalence, and fluctuating market price.

Nevertheless, goat production appears to be a profitable venture. Should goat production's expansion start from small scale producers, availability of ready-made manufactured goat feeds among other concomittant measures will certainly boost the trend.

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