

**FINANCING SMALL RUMINANT OPERATIONS
ALONG GENDER LINES IN IMO STATE, NIGERIA**

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ABSTRACT

This study analyzed the distribution of ruminant livestock in Imo state, the gender-perceived production constraints; the relative contributions of these ruminants to the farm household net income and the implications of these contributions to loan repayments if production is assigned on gender basis. Results showed that within the ruminant class of livestock, small ruminants, particularly goats, dominate the others, followed by sheep and then large ruminant, cattle. Their relative contribution to total farm household net income follows the same order. Female gender class was found to rear higher number of the small-ruminant livestock. However, a χ^2 analysis showed that no significant difference exists in their net farm income from these two classes of livestock. It was concluded that financing of these enterprises on gender basis would not significantly improve the contribution of ruminants to farm household net income and loan repayment capacity. It was recommended, among others, that the constraints imposed by factors such as poor marketing and research systems be addressed in order to translate the relative technical advantage of production of small ruminants by female farmers into financial advantage.

INTRODUCTION

The general environmental factors considered to constrain the production of ruminant livestock (IDRC, 1993) seem to vary in intensity and effect in different agro-ecological settings. In response to reported low productivity of livestock production systems (ILCA, 1990), and the contributions of large and small ruminant livestock to these systems (Kedebe, 1989; Ogunbe, 1998), there is urgent need to try out measures to increase the production and contribution under these varying environmental constraints. This is more so for small-scale operators whose need for production credit has become increasingly critical. Different strategies need to be analyzed to determine the potential and actual contribution of this class of livestock to the income and loan repayment capacity of the farm household. A number of strategies had been tried out, thought to enhance their contributions to the small holders' economy. As a strategy, for instance, majority of households, taking advantage of their peculiar physiological characteristics and environmental conditions, domesticated them alongside their crops in mixed farming systems (Okunlola, 2002). It was thought that between the large and small ruminants, it was easier to increase the population of the later (Okunlola, 2002) in smallholder systems and, so, farmers would generally be better off, and the risk of financing their operations minimized, if the intensification of small ruminant livestock production is followed as a strategy. A gender approach

was undertaken here to examine how this factor affects the profitability and loan repayment potentials following intensification of ruminant livestock production along gender lines. Although the contributions of women had been variously referenced (Quisumbing, 1994; Panayotou, 1993), a number of factors are said to inhibit their effective participation under different socio-ecological constraints (IDRC, 1993; Takyiwa, 1998; Kinikanwo, 2000; Isiugo-Abanike, 1994; UNO, 1989). The general issue here is to estimate the extent of female participation in ruminant livestock operations with a view to establishing if stereotyping such operations along gender lines will enhance their contribution to farm household earnings in the area. The specific issues are the identification of the dominant class and distribution of these ruminant livestock in the area; the gender-perceived production constraints; the relative contributions of these ruminants to the farm household net income and the implications of these contributions to loan repayments if production is assigned on gender basis. It was hypothesized that there is no significant difference in returns accruing to male and female small ruminant operators in the study area.

METHODOLOGY

This study was based on multistage sampling technique. The area was first stratified on the basis of the ADP zoning system, namely Owerri, Orlu and Okigwe Agricultural zones. Four Local Government Council Areas

were chosen from each zone through simple random sampling. Two villages were selected from each local Government Council Area through simple random sampling. Ten farmers, comprising five females and five males, were selected through simple random sampling. This was done from separate lists containing the male and female farmers compiled with the assistance of the Extension Agents in the area. This gave a total of 240 respondents. A structured questionnaire and interview schedule were administered on these respondents as primary sources of data. Secondary data were sourced from the library, the ADP and the Federal Office of Statistics in the State. Data were collected on costs and returns of farm operations from June 1998 to June 2001 and analyzed using simple percentages, and the chi-square test. Data collection lasted from January to April 2002.

RESULTS AND DISCUSSION

The distribution of the average ruminant animals reared by the respondents in the study area between 1998-2001 is as shown in Table 1.

Table 1: Distribution Of The Dominant Ruminant Livestock In The Study Area.

Class of Ruminants	MALE FARMERS		FEMALE FARMERS		TOTAL	
	Average Number per Annum	% of Class Reared per Annum	Average Number per Annum	% of Class Reared per Annum	Number of All livestock	% of All Livestock
Sheep	480 ($\bar{X} = 4$)*	44.44	600 ($\bar{X} = 5$)*	55.55	1080	38.82
Goat	720 ($\bar{X} = 6$)*	42.86	960 ($\bar{X} = 8$)*	57.14	1680	60.39
Cattle	19	86.4	3	13.6	22	0.79
Total	1219 (43.8%)	-	1563 (56.18%)	-	2782	100.00

SOURCE: Field Survey Data, 2002.

- Figures indicated as (\bar{X})* are mean flock sizes of the dominant ruminants in the study area.

Table 1 shows that Goat is the dominant ruminant livestock reared by farmers in the study area (60.39% of all livestock), followed by sheep (38.82% of all livestock) and Cattle (0.79% of all livestock) reared in the area. The table also shows that a higher percentage of all ruminant livestock (56.18%) reared in the area is undertaken by female farmers as compared to the 43.8% undertaken by their male counterpart. This agrees with the view expressed by Saito (1990) that women were primarily

responsible for small ruminant livestock production. In terms of level of participation in specific ruminants, the table further shows that the female farmers rear 55.55% of all the sheep enterprises in the area as against 44.44% undertaken by their male counterparts. For the Goat enterprises, the female and male farmers rear 51.14% and 42.86% respectively. This suggests a higher level of technical efficiency on the part of the female operators with respect to these small ruminants and an indication that women can contend with problems of rearing Sheep and Goat as much as, if not better than, their male counterparts. Leaving aside the investment risk of Goat rearing compared with other ruminants, the advantages that may consolidate their performance in Goat production include high profitability; fast turnover due to earlier maturity; versatility in terms of ability to adapt to various ecological requirements, high resistance to diseases, dehydration and efficient resource utilization. These converge to suggest that emphasis on Goats by females can be translated into real advantage. However, when other socio-economic constraints are brought to bear, these perceived relative advantages might not translate into reality. A number of such constraints identified against the operations of these enterprises and ranked by these two categories of farmers are as shown in Table 2.

Table 2: Rankings Of Identified Constraints To Ruminant Livestock Operations In The Area

Constraints Identified	MALES			FEMALES		
	RANKINGS	No.	%	RANKINGS	No.	%
Non-availability of grazing area and browse species for Sheep and Goat	1	75	63.00	1	67	59.00
Limited Marketing opportunities	2	56	47.00	3	40	33.00
Labour Constraints	4	45	38.00	5	28	23.00
Disease leading to high mortality	3	35	29.00	2	58	48.00
Housing and Management Demands	5	20	17.00	4	32	27.00

SOURCE:Field Survey Data, 2002.

Table 2 shows the problems associated with small ruminant operations identified by male and female farmers and ranked in their ascending order of severity. For the male farmers, the ascending order of constraints is non-availability of grazing area and browse species, limited marketing opportunities, level of mortality and diseases, labour requirements, housing and

management. For the female farmers, these constraints occur in the following order of severity: Non-availability of grazing area and browse species, level of mortality and diseases, limited marketing opportunities, housing and management demands, labour requirement.

Table 3: Summary Contribution Of Ruminant Livestock To Farm Household Income In The Study Area (N= 000)

Source of Income	MALE FARMERS		FEMALE FARMERS		TOTAL	
	Average Amount Accrued per Annum	%	Average Amount Accrued per Annum	%	Average total from each enterprise to both sexes	%
A. Net Income from crop and non-ruminant Livestock	488.24	10.48 (19.54)	2010.88	29.19 (80.46)	2499.12	21.64
B (i) Net Income from Sheep*	1300.00	27.90 (44.44)	1645.00	23.88 (55.86)	2945.00	25.50
(ii) Net Income from Goat*	2364.00	50.74 (42.81)	3158.00	45.83 (51.19)	5522.00	47.81
(iii) Net Income from Cattle*	495.00	10.62 (87.15)	73.00	1.06 (12.85)	568.00	4.92

C. Household Net farm Income (A+B)	4647.24 (99.74%)	-	6886.88	-	11534.12	-
D. Household off-farm Income	12.00	0.26 (79.42)	3.11	0.05 (20.58)	15.11	0.13
E. Total Household Net Income (C+D)	4659.24	100.00	6889.99	100.00	11549.23	100.00

SOURCE: Field Survey Data, 2002.

* Estimated average market prices were ₦3, 300; ₦2, 800 and ₦28, 000 for Goat, Sheep and Cattle respectively.

** Figures in parentheses are percentages accruing to gender class from the corresponding enterprise.

Table 3 shows that 47.81% and 25.50% of total household net income were contributed by Goat and Sheep enterprises respectively. This suggests that 73.31% of total household net income was contributed by small ruminant livestock. The table also shows that Goat and Sheep contributed 50.74% and 27.90% of the total household net income accruing to male farmers respectively. This also suggests that 78.64% of total household net income accruing to male farmers was contributed by these two ruminant livestock. With respect to female farmers, the table further shows that Sheep and Goat contributed 23.88% and 45.83% of the total household net income respectively. This suggests that

69.71% of total household income contributed by female farmers came from these classes of ruminant livestock. It can also be observed from the table that only 0.26% and 0.05% of the total household net income came from off-farm sources for male and female farmers respectively. The balance came from farm sources, indicating that farming is the dominant economic activity that offers life sustenance to the people in the area. The net income from crop and non-ruminant livestock constituted only 10.48% and 29.19% of the total household net income. This buttresses the fact that small ruminant livestock occupy a predominant position in the economic life of the people in the study area.

The net farm income from the two dominant small ruminants accruing to the male and female farmers were subjected to χ^2 analysis and tested for significant difference at 5% probability level. The result is as shown in Table 4.

Table 4: χ^2 Analysis Of Net Farm Income From Sheep And Goat Enterprises Of The Farmers In Imo State.

Class of Enterprise	Net Farm Income of Male Farmers (N' 000)	Net Farm Income of Female Farmers (N'000)	Total (N'000)
Sheep	1300 (124.42)	1645 (1670.58)	2945
Goat	2364 (2389.58)	3158 (3132.43)	5522
Total	3664	4803	8467

$$\chi^2 = \frac{\sum_{i=1}^n (O_i - e_i)^2}{e} = 1.39 < \chi^2_{0.95} = 3.84$$

Decision: Accept H_0 ; Reject H_1

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- o Figures in parentheses are expected frequencies.
SOURCE: Field Survey Data, 2002.

Table 4 shows that the critical value of $\chi^2_{0.95}$ is 3.84 and the empirical χ^2 is 1.39. We, therefore, accept the null hypothesis of no significant difference in net farm income between the male and female farmers. We reject the alternative that the net farm income of the female farmers is significantly higher than that of their male counterparts. This implies that, in terms of repayment potentials, gender plays no significant role in the area and financing these farm operations along gender lines will not enhance the profitability of the enterprises.

CONCLUSION

From the study we can conclude that small ruminant livestock (sheep and goat) dominated the large ruminant (cattle) in the study area. They also accounted for the greater percentage of the total net farm income of both male and female farmers. There was no significant difference however, between the net farm income accrued to the gender classes. The female farmers reared the greater percentage of these small ruminants in the area. This is in line with the view expressed by Saito (1990) that women were primarily responsible for small ruminant production. From the analysis we can further conclude that the advantage of sheer flock size alone could not be relied upon as the basis for assigning any class of livestock operations to the female gender class. Even though female farmers dominated in the rearing of small ruminant livestock, it was further concluded that the financing of their operations along gender lines could not be justified in the area.

RECOMMENDATIONS

In view of the findings of this study, it is recommended that:

1. The marketing system for Goat and Sheep should be improved upon in order to translate the technical efficiency associated with their operations in the area into rewarding financial returns. At present, poorly organized and unrealistic carcass grading and pricing systems,

inadequate promotion of Goat meat, inadequate and inefficient transport systems characterize the markets. These problems need to be corrected if Goat production is to be successfully reared along gender lines.

2. An in-dept on-farm adaptive research needs to be undertaken to address the problem of limited grazing resources available and the constraint imposed on it by the prevailing land tenure system. The adaptive research should determine the appropriate Goat population in relation to grazing resources, the differences between the vegetation types, composition in different natural areas, to access the availability and potentials for developing palatable browse species for Goats and Sheep.
3. Most of the managerial constraints identified are attributable to lack of knowledge and essential skills in Goat and Sheep production. Extension staff and farmers seem not to have received adequate training in Goat and Sheep production. Training programmes need to be mounted to close the yawning knowledge gap in this area. Training should, in particular, reflect improved nutrition, better kid management and housing, disease control and reduced predation, better breed selection from existing local breeds.
4. An enhanced financial support for Goat and Sheep farmers should be encouraged through deliberate

government policy. The bias against Sheep and Goat production is reflected in the limited financial resources being allocated for its operation in relation to other classes of livestock. This approach needs to be changed if the potentials of small ruminant livestock operations are to be realized in the State.

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