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Small ruminant production constraints among farmers in ika north-east local government area of Delta State, Nigeria

Aphunu, A.* and Okoedo and OKojie, D.U. **

**Dept of Agric Extension and Management, Delta State Polytechnic, Ozoro*
***Dept. of Agric, Economics and Extension Services, University of Benin, Benin City.*

ABSTRACT

The study assessed small ruminants' production constraints among farmers in Ika North-East Local Government Area, Delta State. Data were generated from sixty (60) small ruminant farmers randomly sampled through the use of structured interview schedules analyzed using frequency counts, percentages, mean and Anova and for hypothesis testing. Majority (75%) and (87.7%) of the farmers' rear goats and using the tethering management system respectively majority (75.7%) never had contact with extension agents. However, respondents indicated that high cost of drugs/vaccines (m=2.68) and inadequate information on improved management systems (m=2.55) were major constraints to small ruminants' production. It was recommended that appropriate extension services be put in place to enhance the knowledge of farmers on improved husbandry practices.

Keywords: Constraints, small ruminants' production, Delta State.

INTRODUCTION

The Nigerian Society for Animal Production (NSAP), (2009) noted that the Nigeria Livestock Industry contributes a merger 9 – 10 percent of the GDP and only 35.5 percent of the protein intake of Nigerians. Thus, while it was recommended that about 28 percent (65 grams) of estimated minimum protein requirement for an average Nigerian per day should be obtained from animal protein (Imoh, 2000), only 10 grams is derived from animals resources, compared to the FAO/WHO recommendation of 35 grams. There is therefore, an enormous challenge to the Nigerian livestock farmers on the need for increased animal protein supply. In this regard, Adejoro (2006) reported that one of the policies pursued by the government to accelerate the production of animal food was the encouragement of private sector economy to focus on production of poultry, swine, small ruminants and micro livestock production. Although poultry has been regarded as the most the most profitable sources of meat production in many parts of Africa, there is however, a growing awareness among scientists and farmers on the need to exploit the production potentials of goats and sheep which hitherto have been neglected compared with cattle, pigs and poultry (Obinne *et al*, 2006).

Small ruminants (especially goats and sheep) form an integral and important component of the pattern of animal production in most rural communities (Davendra, 1985). Sheep and goats are widely distributed in Nigeria in rural, urban and peri-urban areas representing about 63.7% of total grazing domestic animals in Nigeria (Gefu, 2002). Small ruminants remain popular among the rural populace and resource-poor people. Their importance is primarily assonated with their small size, which is significant for the advantage of mankind as it favours low investments, small risk of loss and preference over large ruminants for food and reproductive efficiency and economic use of available land (Omoike *et al*, 2006). Boyejo and Adedoyin (1994) also reported that sheep, goats rearing are a common feature in most rural households in Nigeria and are important items in religion festivals in Western Nigeria. Hooft *et al* (2008) and Rege (1997) fully documented the contributions of livestock to include economic, food security, family income, risk mitigation and social roles.

Generally, sheep and goats production tend to be extensive. According to Obinne *et al* (2006), small ruminants are kept using a number of different production systems including subsistence in which the animals are tethered; extensive in which they are allowed to roam and tend for themselves and intensive in which they are kept in total confinement. Considering the facts that goats and sheep typifies the small ruminants commonly found in most rural communities and the roles these animals play in the livelihood of small-scale and resource-poor holders, these species have, however not been accorded attention. This work assessed small ruminants' production constraints among farmers in Ika North- East Local Government Area, Delta State. The study specifically investigated:

1. different types of small ruminants kept and management systems employed;
2. respondents' major reasons for rearing small ruminants;
3. respondents' contact with extension agents;
4. major constraints to small ruminants production; and
5. respondents' perceived improvement strategies for increased small ruminants' production.

Hypothesis

A null hypothesis that there is no significant relationship between respondents management system and their perceived production constraints was formulated for the study.

MATERIALS AND METHODS

The study was conducted in Ika North-East Local Government Area, Delta State. The area has prevalence of small ruminants, especially goats and sheep in most of the communities. The area has an undulating topography and a tropical climate with distinct wet and dry season. The population of the study consists of farmers who keep small ruminants in towns and villages of the study area. Five communities were randomly selected from the study area. This was followed by a random selection of fifteen (15) farmers from each of the communities selected above. This gave a total of seventy five (75) respondents sampled for the study however, 60 respondents' interview schedules were found usable for analysis. Structured interview schedule was used to collect data for the study**.** To determine respondents' perceived reasons for keeping small ruminants, eleven item statements were presented and assessment based an a three point Likert-type rating scale of very important (3), important (2) and not important (1) with a midpoint of 2.00; mean scores that are equal to 2.00 or above were regarded as major reason(s) for keeping small ruminants. Respondents' perceived major constraints to small ruminants' production and their perception of the needed

strategies for increased production of small ruminants were measured on a three point Likert-type scales with 15 and 5 items ranging from " not serious" scaled 1 to " very serious" scaled 3, " not important" scaled 1 to "very important" scaled 3, respectively. Responses were categorized according to their mean scores. In terms of respondents' perception on major constraints to small ruminants' production, mean scores of 2.00 or above were classified as serious, otherwise it was not a serious constrint. Also, in terms of needed strategies to improve production, mean scores of 2.00 and above were classified important while mean scores below 2.00 was taken otherwise. Anova was used to test the relationship between respondents' management system and their constraints to production.

RESULTS AND DISCUSSION

Types of small ruminants kept and management systems practiced

Table 1 reveal majorities (75%) of the respondents kept goats, sheep was kept by 10% of the respondents while goats and sheep (combine) accounts for 13.3%. Goats are the most common sights within many rural localities in Southern Nigerian. The ratio of small ruminants agrees with the World Almanac Education Group, cited in Omoike (2006), that Nigeria has a livestock population of 24 million goats, 13.5 million sheep.

The data on Table 1 shows that majority (86.7%) of the respondents practiced the tethering (subsistence) system, 10% use free range (extensive) system, while 3.3% of them practiced the intensive system. This relative high adoption of this system serve as a check to destruction of farm crops by these animals. The tethering system of small ruminants' production according to Anyanwu *et al (*2002)is frequently practiced, involves taking the animals out in the morning and tethering them to stakes where they are allowed to graze on pastures unsupervised till evening. These animals are brought back to their thatched pens near the homestead where they are also tethered for security.

Table 1: Distribution of Respondents by types of small ruminants kept and management system practiced

Types and Management System	Frequency	Percentages
Types of small ruminants		
Goats	45	75
Sheep	6	10
Goats / sheep	8	13.3
Rabbits	1	1.7
Management system		
Tethering	52	86.7
Free range	6	10.0
Intensive	2	3.3

Source: field survey data, 2010.

Major Reasons for keeping small ruminants

Entries on Table 2 show that ten socio-cultural and economic reasons were identified as major reasons for raising small ruminants in the area. These include: food security and income generation (M=2.45) respectively, child naming ceremonies (M=2.35), title acquisition ceremonies (M=2.30), new yam festivals (M=2.27), and social recognition (M=2.35). Other major reasons include, usage in marriage ceremonies (M=2.23), burial ceremonies of title men (M=2.13), dungs used as manure (M=2.05). The implication of these findings is that raising of small ruminants in the area has high socio-cultural and economic significance. This support the assertion of Hooft *et al* (2008) that animals have a social role in status identification, social occasions, local organization and social transactions of their

owners and caretakers.food security and income generation as prime reason of keeping small ruminants corroborates the finding of Davendra and McLeroy (1982), that sheep and goats may be kept as a source of investment and as an insurance against disaster.

Table 2: Respondents' major Reason for rearing small ruminants

Reasons	Means Scores	Standard devastation
Serve as food security	2.45*	0.6
For income generation	2.45*	0.6
Used in child naming ceremonies	2.35*	0.8
Used in traditional acquisition title ceremonies	2.30*	0.6
Used in new yam festivals	2.27*	0.5
To attain social recognition	2.25*	0.6
Used in marriage ceremonies	2.23*	0.6
Used in burial ceremonies of traditional titled men	2.13*	0.6
Acts as alternative to diary	2.12*	0.6
Dungs used as manure	2.05*	0.8
Used in appeasing gods	1.97	0.7
Used in settling debts	1.75	0.9
Hides sold as raw material	1.67	0.8
Dungs used as repellant	1.40	1.2

Source: field survey data, 2010.

Farmers' perception of contact with extension agents

Entries on Table 3 showed that majority (75.7%) of the respondents have not had any contact with extension agents on small ruminants' production matters; while only about 16.6% and 6.7% respectively were visited rarely and sometimes by extension agents. Anyanwu, *et al* (2002) observed a similar situation in their studies on the extension potentials of muturu production, observed that the high percentage of muturu farmers not visited by the extension agents appears to indicate that the extension service/agents are not playing the expected roles in promoting livestock production in Ebonyi state, Nigeria. The low level of contact with extension agents on small ruminants' production in the study area correlates to lack of knowledge and relevant information necessary to boost production. This finding is in line with Williams and Williams (1991) assertion that the Livestock Extension Service of the Agricultural Development Programmes (ADPs) is generally poorly organized and in some cases non-existent.

Table 3: Distribution of respondents by their contact with Extension Agents

Contact with extension Agents	Frequency	Percentages
Never	46	76.7
Rarely (between 1 & 6 months)	10	16.6
Sometimes(Once every month)	4	6.7
Total	60	100.0

Source: field survey data 2010

Farmers' perceived constraints associated with small ruminants' production in the area

Data on Table 4 show the perceived constraints associated with small ruminants' production. The data show that high cost of drugs/vaccines (2.68), inadequate information on improved management practices (2.55), irregular demand for small ruminants' products (2.53) and inadequate finance to expand herd size (2.52) were among the major problems facing small ruminants' farmers. Other constraints include cost of construction materials (2.52), unavailability of labour to look after the flock (2.50), lack of space (2.37) and theft (2.35).

These findings confirm the assertions made by Omoike (2006), Parker (1980) and Egbe-Nweji, Igbejekwe and Nwosu (1999) that the major problems of sheep and goats rearing include among other things, the inadequate supply of water and pasture especially in the dry season, as well as problems arising from inadequate veterinary services and infrastructure.

Table 4: Respondents perception of the constraints associated with small ruminants' production

Problems	Mean Scores	Standard Deviation
Cost of drugs / vaccines	2.68*	0.5
Inadequate information on improved management practices	2.55*	0.5
Scarcity of pasture during the dry seasons	2.55*	0.6
Irregular demand for small ruminants' products	2.53*	0.7
Small ruminants are very destructive	2.53*	0.7
Inadequate finance to expand herd size	2.52*	0.7
Cost of construction materials	2.52*	0.6
Unavailability of labour to look after the flock	2.50*	0.5
Lack of space	2.37*	0.8
Theft (security)	2.35*	0.7
Community / social restriction	1.98*	0.7
Taboos which forbid certain ruminants from being eaten or kept in the community.	1.65	0.8

** Serious constraints*

Farmers' perception of the needed strategies for increased small ruminants' production

Table 5 shows that increased extension agents' contact (2.83), campaign by government to sensitize rural dwellers on the importance of small ruminants' on the rural economy (2.72), and establishment of small ruminants' ranch in rural areas (2.70) were among the measures perceived by the farmers as important for increasing small ruminants' production. Other important perceived measures include educating and training farmers on improved production technologies (2.68) and provision of soft loans (2.37). The fact that provision of soft loan is perceived as one of the major strategies for increased small ruminant's production tend to collaborate our earlier finding that lack of finance in a major limiting factor to increased small ruminants' production in the area.

Table 5: Respondents' perception of important strategies for increased small ruminants' production

Problems	Mean Scores	Standard Deviation
Increased extension agents' contact	2.83*	0.4
Campaigns by government to sensitize rural dwellers on the importance of small ruminants to rural economy.	2.72*	0.6
Establishing small ruminants' ranch in rural areas.	2.70*	0.5
Educating and training on improved husbandry techniques.	2.68*	0.5
Provision of soft loans by institutionalized sources of credits	2.37*	0.6

Source: field survey data 2010 **Important*

Relationship between management systems and constraints to small ruminants' production

The result of Anova analysis on the difference in production constraints across small ruminants' management system in Table 6, shows a non significant mean difference (**f**=1.448, **p**=0.239). This implies that, irrespective of the management systems adopted for small ruminants' production in the area, production constraints remain the same (no significant difference exists in the constraints to production). This result could be attributed to the fact that the respondents are not scientifically knowledgeable to the extent that

management system will address the constraints of production, this can be expected as respondents contact with agricultural extension agent is low enough to deprive them of proven agricultural production technologies in small ruminants in the study area.

Table 6: Difference in production constraints across small ruminants' types (Anova)

	Sum of squares	d.f	Mean squares	f-value	Significance
Between Groups	37.404	3	12.468	1.448	0.239
Within Groups	482.330	56	8.613		
Total	51.733	59			

CONCLUSION

The findings of this study established that majority of the farmers surveyed never had no contact with extension agents on improved small ruminants' production practices while for those that are in contact the frequencies of such contact is rather too low. The results further showed that small ruminants (especially goats) have high socio-economic and cultural significance in the area, and hence many households have pockets of small ruminants in the area. However, the major constraints facing small ruminants' production are high cost of drugs/vaccines, inadequate information on improved production practices, and lack of credit, among others.

Based on these findings, it is being suggested that appropriate extension service that will respond to the peculiar needs of these farmers, especially on the aspect of providing information and knowledge on improved livestock management practices be put in place. This will enhance the frequency of contact with extension agents and planning programmes of learning activities for the benefits of farmers. There is need to improve the financial base of the farmers in addition to provision of basic infrastructural facilities to increase small ruminants' production.

REFERENCES

[1] Adejoro, S.O. (**2006**). *World Poultry*, Vol. 22, N0. 11, Pp. 105 – 107.
[2] Anyanwu,A.C., Agwu, A.E. and Ibekwe, F.N.(**2002**). Nigeria.*Journal of Agricultural Extension*, Vol.6,pp.1-9.
[3] Boyejo, O. and Adedoyin, S.F. (**1994**). *International Journal of Food and Agricultural Research*, Vol. 3, No. 2 December. Pp 69 – 79.
[4] Davendra, C. and Mcleroy, G. B. (**1985**). Goat and Sheep Production in the Tropics. England:
[5] Egbe-Nwiyi, T.N.C., Igbejekwe, F.N. and Nwosu, C.O. (**1999**). *Bulletin of Animal Health and Production in Africa.* Vol. 47, N0. 7 Pp. 61 – 70.
[6] Gefu, J.O.(**2002**). Socio-economic Considerations in Small Ruminant Production. In: Lakpini,C.A.M.,Adamu,A.M., Edoche,O.W. and Gefu, J.O.(eds). Manual for Small Ruminant Production in Nigeria. National Animal Production Research Institute, Ahmadu Bello University, Zaria, Nigeria. Pp.8-11.
[7] Hooft, K, Milar, D., Geerlings, E. and Django, S. (**2008**). Endogenous Livestock Development in Cameroon. Agromisa Publishers, Wageningen, The Netherlands.
[8] Imoh,A.N.(**2000**).Women time and role in livestock production: The Nguru Mbaise Experience. Animal Production in the New Millennium: Challengeand Option. NSAP and NLPRJ, Ahmadu Bello University, Zaria. Pp. 250-255.

[9] Nigerian Society for Animal Production (NSAP, **2009**). A Communique: 34th NSAP Annual Conference, March 15-18, University of Uyo, Akwa Ibom State.
[10] Obinne, j.i.,Moemeka, A.P and Mmereole, F.U.C. (**2006**).Op.cit
[11] Omoike, A. (**2006**). Nigeria. *Journal of Agriculture and Social Research,*Vol. 6, No. 2, pp.23-31.
[12] Parker, W.H. (**1980**). Health Disease in Farm Animals: An Introduction to Farm Animal Medicine. Perganion, Britain.
[13] Rege, J,E.O.(**1997**). The Contribution of indigenous livestock to the economies of sub-Saharan African Countries. Proceedings of a seminar organized by CTA, OAU/IBAR and the Ministry of Agriculture and Cooperation, Mbabane, Swaziland, 28 July-1 August.
[14] Williams,C.E, and Williams, S.K.T.(**1991**). *Nigeria Journal of Rural Extension and Development*, Vol.1,pp.1-13.