

## Full Length Research Paper

# Preliminary investigations into the socio-economic and production characteristics of sheep and goat farming in the Owerri zone of Imo State, Nigeria

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Accepted 13<sup>th</sup> July 2010

A total of one hundred and twenty (120) farmers randomly selected from three Local Government Areas (LGAs) were surveyed to examine the socio-economic and production characteristics of small ruminant (sheep and goat) production in the Owerri Zone of Imo State, Nigeria. The parameters surveyed included sex, age, educational qualification, experience. Others were feeding, breeding, health, housing and marketing practices. Out of the 120 questionnaires distributed, only 51 farmers were available for interview. The results showed that, 56.9% of the farmers were males, and 47.1% of the farmers were between the ages of 51 and 70 years. Twinning was observed to be the most common type of birth amongst the small ruminants and accounted for 70.6%, while lambing and kidding was mostly twice a year (60.8%). Also, the results showed that, 62.7% of the farmers had 6-10 years experience in small ruminant production. Thatched roof was the dominant form of housing found within the study area. Farmers fed their animals three times daily with 78.4% fed on a mixture of browses and grasses, and 53% supplemented by household wastes. The results indicate that there is the need to develop the small ruminant production sub-sector by putting in place appropriate government policies to encourage the participation of youths and women and promote commercialization so that the farmers can increase their present holdings for improved profitability. The governments in the southeastern parts of Nigeria pay greater attention to poultry production and piggery while, smallholder sheep and goat farmers are left to their fate thus resulting to low small ruminant productivity.

**Keywords:** Goat, Nigeria, production, sheep, socio-economics, twinning.

## 1. Introduction

Sheep and goats production represents an integral part of the small holder farming system in southeast of Nigeria. Besides their use as sources of meat, sheep and goats also provide household income, while their manure helps to restore soil fertility in mixed farming systems. They are important assets for investment and insurance for many households among the rural poor (Smith, 1998). Also, they play significant socio-cultural roles in the customs and traditions of many Nigerian societies. Furthermore, they are easier to manage by women and children, who form the bulk of farm labour for sheep and goat production, due to their smaller body size relative to cattle (Adesehinwa et al., 2003). The International Livestock Centre for Africa (ILCA), now the International Livestock Research Institute (ILRI), village surveys in southeastern Nigeria indicated that 75% of the population kept small ruminants (Sumberg and Cassaday, 1985) making them potential contributors in improving animal protein intake of Nigerians. Meat from small ruminants enjoys wide acceptability among different socio-cultural groups (Peacock, 1996). Ewes (mature female sheep) and does (mature female goat) are reputed to be prolific and early maturing (Odeyinka and Okunade, 2005).

With an ever increasing human population and the attendant high consumption of sheep and goat meat in Imo State of Nigeria (National Population Commission, 2008), it becomes necessary to increase production by identifying the various constraints with the current sheep and goat production systems with a view to addressing them. The West African Dwarf (WAD) sheep and goats are the most predominant breeds in the study area thus, the study concentrated on these particular breeds of small ruminants. Despite the premium placed on meat from the WAD species of goat amongst the urban household consumers, there is yet to be a determined and deliberate effort at its commercialization leaving the bulk of demand in the southeastern parts of Nigeria to be met, largely, by supplies from the northern parts of Nigeria. The study was designed to provide baseline information on the small ruminant (sheep and goat) production system. This would provide the information necessary for planning intervention programmes and for farmers interested in sheep and goat production within the study area.

## Materials and methods

The study was carried out in three Local Government Areas (LGAs) namely, Owerri-West, Owerri Municipality and Aboh Mbaise in Imo State. Four communities were selected from each of the three LGAs giving a total of 12 communities. The

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communities were: Ihiagwa, Eziobodo, Obinze, and Naze (Owerri-West LGA); Ikenegbu, Prefab, Akwakuma, and Urratta (Owerri Municipal LGA); Egberede, Eziata, Amaohuru, and

Obetiti Nguru (Aboh Mbaise LGA). A random selection of 10 farmers from each of the 12 communities gave a total of 120 respondents making up the sample size. The sample population comprised households that reared sheep and/or goats.

Data were collected through structured questionnaires administered to respondents through personal interviews, see appendix. Contact farmers of the Imo State Agricultural Development Programme extension unit were also interviewed. The questionnaires were designed to help obtain detailed information on the socio-economic characteristics of the respondents and production characteristics and parameters. Data generated were subjected to statistical analysis using descriptive statistics. Simple percentages and frequency distribution tables were used to characterize and classify the data using the Statistical Package for Social Sciences (SPSS Release 7.0, 1999).

## Results

### 3.1. Socio-economic characteristics of respondents

Results indicated that there were more male- (56.9%) than female- (43.1%) small ruminant farmers as shown in Table 1. This could be due to the fact that the males were traditionally the heads of the households and sometimes the animals were inherited from the parents and ownership is transferred to the male heads of the household. The educational status of the respondents showed that 49.0% had secondary education, 37.3% had primary education, and 13.7% had tertiary education. An overwhelming percentage (98.0%) of respondents were married, indicating that the current production methods may not be attractive to the single youths, a development which can be addressed by providing the necessary inputs for youths to go into commercial sheep and goat production. The farmers were within the ages of 51 to 70 years, and 33.3% were between 31 and 50 years showing that younger people were less involved in small ruminant production.

**Table 1:** Background information of small ruminant farmers in the study area

General characteristics	Frequency	Percentage (%)
Sex of farmer:		
Male	29	56.9
Female	22	43.1
Farmer's Level of Education:		
Primary School	19	37.3
Secondary School	25	49.0
Tertiary	5	13.7
Farmer's Marital status:		
Married	50	98.0
Single	1	2.0
Farmer's Age:		
Below 30	1	2.0
31-50	17	33.3
51-70	24	47.1
Type of animal kept:		
Sheep	7	13.7
Goat	39	76.5
Mixed species	5	9.8
Years of experience in small ruminant production:		
5-10 years	32	62.7
11-20 years	12	23.5
Over 20 years	7	13.7
Aim of keeping the animals:		
Consumption	1	2.0
Sales	41	80.4
Hobby	8	15.7
Breeding	1	2.0
Number of animals per farmer:		
Less than 5	18	35.3
6-10	24	47.1
11-20	6	11.8
21-30	2	3.9
Above 30	1	2.0

About 76.5% of the respondents reared goats, while 13.7% rear sheep and 9.8% reared both sheep and goats. Majority (62.7%) of the respondents had 5-10 years experience in keeping small ruminants, 23.5% had 11-20 years experience, and 13.7% recorded over 20 years experience. Also, 80.4% of respondents kept the animals for the purpose of selling, while 15.7% kept the animals as a hobby. This is in agreement with previous reports that small ruminants served as an investment and source of revenue to augment family income (Ayoola and Ayoade, 1992). In terms of flock size, 47.1% had flock size of between 6 and 10 animals, 35.3% had less than 5 animals, and only 3.9% had flock size of between 21 and 30 animals. This figure is higher than the 2 to 4 animals reported by Submerge and Mack, (1985) for sheep and goat production in southeastern Nigeria.

**3.2. General management practices**

The mixture of browses and grasses was the dominant feed in the study area and accounted for 52.9%, while 41.2% reportedly

fed their animals with browses only under an intensive system. (Table 2). Only 3.9% of the farmers fed with grasses only and 2.0% fed the animals with household waste alone. This may be due to the fact that pasture remains the cheapest feed source (Bakrie et al., 1996). The practice of feeding the animals three times daily was common, accounting for 78.4% while 21.6% fed their animals two times daily. The age at which males were first observed mating was reported to be below 12 months by 68.6%, while 31.4% reported age of between 1 and 2 years. For females, 84.3% reported that they had their first pregnancy (partus) below 12 months of age and 15.7% reportedly bred their animal between 1 and 2 years. In terms of sanitation, 90.2% of the farmers reported daily removal of droppings but, only 9.8% reported weekly removal. All the farmers surveyed kept small ruminants with mixed colours predominating accounting for 78.4% which is in agreement with previous report by others (Gefu et al., 1994).

**Table 2:** General management practices and animal characteristics on small ruminant farms in Owerri, Nigeria

General characteristics	Frequency	Percentage (%)
Age at which males were first observed mating:		
Less than 1 year	35	68.6
1-2 years	16	31.4
Above 2 years	0	0
Age of females first parity:		
Below 1 year	43	84.3
1-2 years	8	15.7
Colour of animals:		
Black	10	19.6
Brown	1	2.0
Mixed	40	78.4
Types of birth:		
Single	9	17.6
Twins	36	70.6
Triplets	6	11.8
Number of births per female animal per year:		
Once	14	27.5
Twice	31.0	60.8
Thrice in two years	6	11.8
Type of feed:		
Browses	21	41.2
Grasses	2	3.9
Browses and grasses	27	52.9
Household waste	1	2.0
Frequency of feeding animals per day:		
Once	0	0
Twice	11	21.6
Thrice	40	78.4
Frequency of removing droppings:		
Daily	46	90.2
Weekly	5	9.8
Monthly	0	0
Type of housing:		
Thatch	27	52.0
Zinc	23	46.0
Others	1	2.0
Constraints to production:		
Lack of inputs	6	11.8
Seasonal scarcity of feed	44	86.3
Disease outbreak	1	2.0
Uses of the animal droppings:		
Sales	3	5.9
Farm yard manure	47	92.2
Other uses	1	2.0

Large percentage of the animals had twins (70.6%) while, 17.6% and 11.8% had single and triplets, respectively. This is in

agreement with previous reports on the proficiency of WAD sheep and goats that are predominant

in the study area. The housing structure revealed that 52.0% of the respondents housed their animals in thatch houses while 46.0% of the sheds were covered with corrugated iron sheets.

Major constraints to production were shortage of feeds especially during the dry season (86.3%) while 11.8% and 2.0% reported lack of inputs and disease outbreaks respectively as the major constraints. This implies that the seasonal scarcity of forage affects the production of the small ruminants in the study area. Lambing and kidding (number of births per year) among the does or ewes was twice per year (60.8%). This is in agreement with Payne (1992) who reported that sheep and goats in southeastern Nigeria kid twice yearly. The data on the kidding interval revealed that 27.5% had lambing /kidding interval within one year, while 11.8% had lambing three times in two years. Majority of the farmers reported that they use the animal droppings as a source of manure to fertilize the soil while only 5.9% of the farmers sold the animal droppings.

## 2. Discussion

The data on the average number of animals revealed that about 80% of the farmers had less than 10 animals per household showing that at the present level of production, it would be impossible for farmers to meet the demand for West African sheep and goat meat by urban and peri-urban consumers in Imo State if urgent intervention by government is not carried out. This can be made through special programme targeted at addressing the constraints to sheep and goat production as well as the provision of credit facilities through a functional agricultural and rural development banking system. The present system of shortage of or unavailability of credit for agricultural production in Nigeria's Agricultural Credit Banks can only make matters worse.

The prevalence of thatch houses as the dominant form of housing support the report that sheep and goat production within the study area is in the rudimentary level, being kept by poor household with minimal investment. This situation can be reversed with provision of adequate credit facilities backed up by capacity building programmes to encourage young school leavers to practice sheep and goat production on a profitable basis. The high percentage of twinning and shorter kidding intervals recorded for West African Dwarf offers an added advantage that would ensure that the enterprise remains profitable since the custom and religion of Nigeria's societies make sheep and goats an indispensable commodity. Although feeding was identified as a problem during the dry season, the availability of multipurpose trees and shrubs and household wastes can fill the gap.

## Conclusion

Following the production indices described above, it can be inferred that sheep and goat production in southeastern Nigeria and can be improved by appropriate government policies to encourage the participation of youths and promote commercialization of the enterprise. Given the premium placed

on WAD sheep and goats among urban household consumers in Owerri Municipality the enterprise is a suitable source of employment for the teeming youths of Imo State and beyond if the necessary inputs are made available. Although this study is a preliminary one, it is hoped that further studies would follow to highlight other details not captured in the present study.

## References

- Adeshinwa, A.O.K., Okunola, J.O., and Adewunmi, M.K., (2003) Socio-economic characteristics of small ruminant livestock farmers and their constraints in parts of southwestern Nigeria. *Livestock Research for Rural Development* 16(8).
- Ayoola, G.B., Ayoade, J.A., 1992. Role of women in livestock enterprises in Nigeria. A case study of rural Tiv and Idoma communities in Benue State.
- Bakrie, B., Hogan, J., Liang, J.B., Tareque, A.M.M., Upadhyay, R.C., 1996. Ruminant Nutrition and Production in the Tropics and subtropics. Australian Research Canberra. In: J. Hogan feeding systems: a preamble. Pp 5-16.
- Gefu, J.O., Achi, I.F., Alawa, C.B.I., Magaji, S.O., 1994. Characteristics of small holder sheep and goat management practices in south eastern Nigeria: Observations from Anambra State. *Nig. J. Anim. Prod.* 21, 127-134.
- National Population Commission, 2008. Demographic and Health Survey 2008, National Population Commission, Abuja/ICF Macro, Calverton, Maryland, USA 630 pp.
- Payne, W.J.A., 1992. An Introduction to Animal Husbandry in the Tropics. 4<sup>th</sup> edition. Tropical Agricultural Sciences, Longman, London and New York.
- Peacock, C., 1996. Improving goat production in the tropics. Manual for development workers. Oxfam/Farm Africa pp 1-7.
- Odeyinka, S.M., Okunade, G.K., 2005. Goat Production in Oyo State: A case study of Ogbomosho town. *Nig. J. Anim. Prod.* 32, 108-115.
- Smith J.W., 1998. Animal Agriculture in West Africa: The Sustainability Question. Keynote address at the silver anniversary conference of Nigeria Society for Animal Production, (NSAP) and West African Society for Animal Production (WASAP) inaugural conference. 21-26 March, 1998. Abeokuta, Nigeria.
- SPSS Release 7.0, 1999. Statistical Package for Social Sciences. Procedures and Facilities for Release 7.0. McGraw Hill Book Co. NY
- Sumberg, J.E., Cassaday, K., 1985. Sheep and goats in the humid West Africa. In: Sumberg, J.E., Cassaday, K., Eds. sheep and goats in Humid West Africa. Proceedings of a Workshop on small ruminant production systems in humid zone of West Africa, Ibadan, Nigeria, 23-26 January, 1983. ILCA. Addis Ababa, Ethiopia. Pp. 3-5.
- Sumberge, J.E., Mack, S.O., 1985. Village production of West African Dwarf Sheep and Goat in Nigeria. *Trop. Anim. Hlth. Prod.* 17, 135-140.