Characteristics of Smallholder Sheep Production from selected Local Government Councils and States in Nigeria

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ABSTRACT

The study was conducted in eight states (Imo, Akwa-Ibom, Abia, Bayelsa, Delta, Cross River, Edo and Lagos) in Nigeria with the use of structured questionnaires. 1200 questionnaires were administered randomly in selected three local government councils from eight states sampled. Questions were asked based on background production systems and constraints to sheep production. Data were analyzed separately using descriptive analysis. The results showed that 25% of the sheep owners were females, while 75% commercial sheep farms employed male labour. West African Dwarf sheep was the common breed of sheep raised in the eight communities. Majority of the household owners of sheep (57.57%) practiced free-range system of production, while a large percentage (75%) of the commercial sheep farms practiced intensive system of production. There were no specialized housing and feeding programmes, with a larger percentage of both categories feeding crop residues and cowpea husk to their sheep. The household owners of sheep seldom feed forage to their sheep (17.86%), while 25% commercial sheep farms feed forage to the sheep. The common diseases in the area were diarrhoea, pneumonia and mange. Breeding of animals was not controlled in the study areas. The constraints to sheep production in the area included automobile accidents, seasonal lack of feed, diseases, theft, lack of capital and inadequate land area.

INTRODUCTION

Sheep production is an important component of Nigerian livestock industry. Sheep represent about 60% of the total grazing domestic livestock in Nigeria (Ahaotu *et al.*, 2009). These animals display a unique ability to adapt and survive in areas where they are found and consequently their wide geographical distribution in Nigeria. Sheep supplies meat, milk, wool, skin and other products and also serves as a flexible financial reserve for the rural population as well as play other socio-cultural roles in the

customs and tradition of many Nigerian societies.

It has been observed that only 8.0gm of the 53.8gm of protein consumption level of Nigerians per day is derived from animal sources (Gatenby, 2009; Ahaotu and Ayo-Enwerem, 2008), suggesting less than 16% contribution of animal products to protein consumption of Nigerians. This is very poor indeed when compared with countries like U.S.A with about 69% of total protein being derived from animal sources (Berger *et al,*.2003). Contribution of sheep to the total meat supplies in Nigeria may be related to the population of these animals in the country. The keeping of sheep also serves as an investment alternative and a source of additional income to the owners.

Of the three major livestock production systems (extensive, semi-intensive and intensive) recognizable in Nigeria, the traditional village system is the most prevalent, especially in areas with low human population density. This production system has a low-labour-input and low to traditional arable and cash crop farming (Ahaotu, 1991). Under the observed traditional village system

of production, animals may be confined or allowed to graze (scavenge) on natural pasture. The predominant breed kept in the study area is the West African Dwarf Sheep and is ubiquitous, especially in the rural areas and because they are trypano-tolerant, they out-number cattle (Ayo-Enwerem *et al.,* 2009).

The growing human population in the Southern parts of Nigeria in general coupled with rapid urbanization and the subsequent land squeeze will compel further to grazing animals, which will directly necessitate intensive management practices (Ayo-Enwerem *et al.,* 2008a). There is therefore, the need to develop appropriate production strategies in consonance with perceived agricultural intensification. This study was designed to evaluate the characteristics of sheep production in the randomly selected communities and states in Southern Nigeria.

MATERIALS AND METHODS
The study was carried out at Edo, Lagos, Cross River, Delta, Bayelsa, Abia, Akwa-Ibom and Imo selected states in Southern Nigeria. The randomly selected states are densely

populated. The states are located within the lowland coastal plain of Nigeria. Cross River State lies between latitudes $5^o 32^1$ and $4^o 27^1$ North and longitudes $7^o 50^1$ and $9^o 28^1$ East. The major occupations of the people are trading, public service and farming. Many do combine farming with other occupation like tailoring, masonry and transportation.

A total of 1200 questionnaires were distributed among randomly selected participants in selected communities and states in Southern Nigeria. The selected local government councils were shown in Table 1.

Table 1: Selected Study Sites

S/N	States	Local Government Councils
1.	Imo	Orlu, Ikeduru and Owerri Municipal
2.	Akwa Ibom State	Itu, Uyo and Abak
3.	Abia	Bende, Umuahia North and Ikwuano
4.	Bayelsa	Southern Ijaw, Oporoma and Sagbama
5.	Delta	Sapele, Adegbarassa and Ajakimonu
6.	Cross River	Usua-Esuk, Akpaboyo and Adiagbo
7.	Edo	Esan South East, Etsako Central and Ovia North East
8.	Lagos	Badagry, Ejigbo and Mushin

Fifty questionnaires were distributed per local government council and 150 distributed per town. Out of the one thousand two hundred questionnaires distributed, only seven hundred and twenty (720) were collected back for analysis. The smallholder sheep farmers responded to 700 questionnaires and the data obtained from the study were analyzed using descriptive statistics such as range, mean, frequency and percentages.

RESULTS AND DISCUSSIONS

Two different sets of data were collected during the study. The first set was from 20 commercial sheep farms in the sampled areas and the second set from 700 household owners of sheep in the areas. The results were analyzed and presented in Tables 2, 3 and 4.

Table 2 showed the background information of the respondents expressed in percentages and their absolute values. Sheep production in the sampled areas was common among adults. Majority of household keepers (64.29%) were males while 35.71% were females. This is similar to the observation made under village production of sheep in Ohaji zone of lmo State (Nlemadim, 2010). Majority of the commercial sheep farms (75%) hired only male laborers to rear their sheep. Most of the respondents were educated, having a minimum of secondary education. This is in agreement with results of works conducted in peri-urban towns in Imo State (Nlemadim, 2010; Okafor, 2010). 44.57% of the household owners of sheep take sheep production as a part time business, while 55.43% of the commercial sheep farms take sheep production as a full time business.

Free-range system of management is the common method of production among the household owners (57.57%) while 75% of the major farms practiced the intensive system of production. Majority of the household owners did not have houses for their sheep; instead the sheep sleep around the compound and along the streets at night, while majority of the major farm housed their animals in concrete floored houses. A large percentage of both the farmer and household owners purchased their parent stock and the herd than increase through new births (Opara, 2010 and Matthewman, 1999).

The common diseases of sheep in the sampled areas were diarrhoea, mange, pneumonia and *Peste des petite ruminante* (PPR). Among the commercial sheep farms, PPR and worm infestations were prevalent.

Table 3 showed the type and sources of the feeds given to the sheep. All the commercial sheep farms feed forages and crop residues to the sheep, while 17.86% of households fed forages to the sheep.

Table 2: Characteristics of Sheep producers in randomly selected three local government councils from eight states of Nigeria

	Commercial Sheep Farms (n=20)		Householders (n=700)	
Characteristics	Frequency	%	Frequency	%
Sex of Respondents				
Male	15	75	450	64.29
Female	5	25	250	35.71
Age of Respondent				
0 – 18	2	10	125	17.86
19 – 30	6	30	205	29.29
31 – 50	8	40	295	42.14
51 - 70	4	20	75	10.71
Form of Business				
Part Time	12	60	312	44.57
Full Time	8	40	388	55.43
Types of Animals Kept				
Rams	4	20	147	21
Ewes	10	50	348	49.71
Lambs	6	30	205	29.29
Systems of Management				
Intensive	15	75	105	15
Semi-Intensive	4	20	192	27.43
Free Range	1	5	403	57.57

The types of crop residues fed included cassava peels, cowpea husk, corn starch meal residues and coconut meal, forages given to the animals were *Leucaena leucocephala, Gliricidia sepium, Centrosema pubescens, Panicum maximum, Alchornea cordifolia, Elaeis guinnensis* leaves, *Bracharia brasilantha and Costus afer*. Among the commercial sheep farmers, 30% got their feeds from the farms, while 25% bought the crop residues from the market. 14.43% of the household owners of sheep bought their feed from the market, while 39.86% fed waste from the farm to the sheep. Both

parties of sheep keepers fed their   sheep on a regular basis.

Table 3:   Feeding Pattern of Sheep in randomly selected three local government councils from eight states of Nigeria

Commercial Sheep Farms (n=20)			Household Owners (n=700)	
Characteristics	**Frequency**	**%**	**Frequency**	**%**
Types of Feed				
Kitchen wastes	4	20	295	42.14
Forage	5	25	125	17.86
Crop Residue	5	25	135	19.29
Crop by –Products	6	30	145	20.71
Source of Feed				
Farm	6	30	279	39.86
Market	2	10	101	14.43
Processors	4	20	124	17.71
Kitchen Wastes	8	40	196	28.00

Total observation for the type of feed is 100%. It was also generally observed during the study that household owners did not practice control breeding as shown in Table 4 while 30% of commercial sheep farms practiced inbreeding. All parties practiced loose ram mating, 70% of sheep had multiple births; the young ewe gives birth to one lamb initially and then starts giving birth to two or three lambs afterwards. The farmers since they loose their rams, inbreeding is predominant in the studied areas. This is in agreement with Ahaotu *et al.* (2009) on the prolificacy of West African breed of sheep, which are predominant in the area. At the early stage of reproduction, single birth is experienced while at the later stage, multiple births were observed respectively.

Table 4: Mating Behaviour of Sheep in randomly selected three local government councils from eight states of Nigeria

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Characteristics	Commercial Sheep Farms (n=20)		Householders (n=700)	
	Frequency	%	Frequency	%
Inbreeding	6	30	264	37.71
Loose ram mating	10	50	324	46.29
Multiple births	14	70	595	85
Single births	6	30	105	15

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Table 5 shows the level of sheep production development in terms of access to extension services and agricultural journals. 69.57% of household owners and 65% of commercial sheep farms did not have access to extension services while minority of the commercial sheep farms and very few household owners, 30.43% and 7% respectively had access to agricultural journals and magazines. Other constraints to sheep production in the area include: diseases, accidents, seasonality of feed supply, theft, destructive habit of sheep, lack of capital and land. It was observed that 45% of the commercial sheep farms made use of the sheep's manure to fertilize the soil, while 44.86% of the household owners utilized the manure.

Table 5: Level of Developments in randomly selected three local government councils from eight states of Nigeria

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Commercial Sheep Farms (n=20)			Household Owners (n=700)	
Characteristics	Frequency	%	Frequency	%
Access to Extension Agent				
Yes	7	35	213	30.43
No	13	65	487	69.57
Access to Agricultural Journals				
Yes	4	20	91	13
No	14	80	609	87
Sheep's Manure				
Spread on the Farm	9	45	314	44.86
Thrown away	11	55	386	55.14

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Sheep production in randomly selected three local government councilsfrom eight states of Nigeria was basically on a part-time basis. This is in agreement with Ahaotu (1991) that sheep in the humid tropics are generally kept as a low cost adjunct to arable and tree crop production. The distribution of sheep in the area shows that the household owners are the major producers of sheep in the area. The productivity of the sheep in the areas was very high due to the free-range system of production as shown in Table 2. This is because under this system, the animals received minimum inputs in terms of nutrient content of the feed and breeding control programme. The sheep producers in the areas had access to veterinary services, which would help to reduce the rate of mortality among the sheep. Crop residues are the most common feed type fed to sheep, although these feed resources are abundant and cheap sources of nutrients for ruminants especially during crop growing season.

Table 6 shows the diseases and constraints predominant in randomly selected three local government councilsfrom eight states of Nigeria. 40% of commercial sheep farms and 44.43% of household owners experienced PPR in their various farms. Worm infestations, accidents, skin diseases, lack of capital and land, destructive habits of sheep and seasonality of feed recorded the highest percentages amongst the CSFs and household owners.

Table 6: Diseases and Constraints Predominant in randomly selected three local government councils from eight states of Nigeria

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Commercial Sheep Farms (n=20)		Household Owners (n=700)	
Characteristics	Frequency	%	Frequency	%
Peste des Petite Ruminate (PPR)				
Yes	8	40	311	44.43
No	12	60	389	55.57
Worms Infestations				
Yes	11	55	423	60.43
No	9	45	227	39.57
Skin diseases				
Yes	16	80	559	79.86
No	4	20	141	20.14
Mastitis				

Yes	3	15	87	12.43
No	17	5	613	87.57
Theft				
Yes	14	70	609	87
No	6	30	91	13
Destructive habits of Sheep				
Yes	15	75	450	64.29
No	**5**	**25**	**250**	**35.71**
Lack of Capital and Land				
Yes	16	80	690	98.57
No	4	20	10	1.43
Seasonality of feed				
Yes	14	70	575	82.14
No	6	30	125	17.86

CONCLUSION

Sheep keeping is a common practice among the people of Nigeria, especially among the households. Free-range system of production was mostly used and the breed of sheep kept was limited the West African Dwarf Sheep that is adaptable to the area. The level of development of sheep production in the area can be said to be low because the services of the extension agents in the area were virtually none existing.The gene pool of the sheep in the area was not being improved since no form of genetic improvement was done due to lack of controlled breeding practice. The constraints to sheep production were seasonality of feed supply, accidents, theft, poor management system and disease. Sheep keepers should provide housing for sheep or practice tethering to reduce the occurrence of theft and accidents.

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