

## **ASSESSMENT OF HOUSING, NUTRITION AND HEALTH MANAGEMENT PRACTICES AMONG SMALLHOLDER SHEEP FARMERS IN EJIGBO LOCAL AREA, OSUN GOVERNMENT STATE, NIGERIA.**

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### **Abstract**

This study assessed the housing, nutrition and health management practices among smallholder sheep farmers in Ejigbo Local Government Area of Osun State, Nigeria. Multi-stage sampling procedure was used to select one hundred and twenty smallholder sheep farmers as sample for study. Data were collected with structured interview schedule. Data were analysed with both descriptive and inferential. The results of the descriptive analysis showed that majority of the smallholder sheep farmers were middle-aged married male farmers and traders with low level of formal education. Furthermore, most of them sourced their breeding flock from open market, rear West African dwarf (WAD) sheep, practice free range system, fed their animals with cassava chips, employed self-medication, using herbs in the treatment of their diseased animals and sell their animals directly. The results of inferential statistics revealed a significant difference in breeds of sheep kept and method of treatment of diseases. There is a positive and significant relationship between the religion and sheep keeping, farmers' household size and their flock size, sheep keeping experience and flock size. This study concluded that poor livestock management practices among smallholder sheep farmers could limit the performance and profitability of the sheep enterprise; hence smallholder sheep farmers should be encouraged to adopt improved livestock management practices to increase their productivity.

### **Introduction**

In Nigeria, small ruminants which represent about 63.7% of total grazing domestic livestock are widely distributed in rural, urban and peri-urban areas. There are estimated national population of 22.1 million sheep (FDLPCS, 1992; Ajala *et al.*, 2008). Small ruminants play significant roles in the nutrition, social and economic life of Nigerians. In most cases, the small ruminants are not kept strictly to provide meat for the household, or as a regular source of cash income. The importance of scavenging sheep is rather as a savings account or insurance policy, that is, they are sold when extra cash is needed. They also play a specific role in social life, when at weddings and other festivities they are presented as gifts or slaughtered as ceremonial meat (Ajala *et al.*, 2008).

According to Ajala (2004), it has been reported that small ruminants dominated the cultural life and system of Nigeria's peasantry. Olaloku (1999) posited that the Nigerian livestock industry is structured in such a way that 80-90% of the nation's livestock are dominated by small-holders and other traditional groups. The main contributor to the meat industry in Nigeria is the subsistence animal husbandry; which consists of small herds and flocks that are kept in the rural, urban and

peri-urban areas (Momoh and Ochaba, 2002). Statistics have shown that more than half of Nigeria's livestock is traditionally managed. About 99.75% of cattle, 99.97% of goats, 99.84% of sheep, 90.75% of pigs and 86.17% of chickens are traditionally managed (Njoku, 2005). Therefore, adequate attention must be given to the traditional livestock industry in any attempt to raise the level of meat production in the country. Shaib *et al.* (1997) stated that in order to bridge protein deficiency gap in the diet of an average Nigerian, there is need to increase the production of domestic animals, especially small ruminants, which are often the conventional sources of animal protein in the diet of the average Nigerian.

The major threats to livestock production and productivity in Nigeria, especially small ruminants such as sheep and goats include housing, health, feeding, high incidence of pest and diseases, parasite infestation, high mortality rate and fluctuating market prices (Doma *et al.*, 1999; Ajala, 2004). High economic losses arising from stunted growth, debility, poor reproductive performance or death in affected animals limit the level of economic returns from small ruminants' enterprise (Jawara, 1990). Similarly, parasite infestation and diseases have significantly reduce economic value of the small ruminant enterprise

due to losses from mortality, lowering of reproductive rate, weight loss and increased cost of production due to additional veterinary bills. Animals in discomfort or pain are likely to be less productive than their healthy counterparts (Lamorde, 1996). Therefore, good housing and nutrition, as well as maintaining the herds or flocks in good state of health are very important in improving livestock production and productivity in the country. It was therefore, the aim of this study to assess the socio-economic characteristics, housing, health and nutrition practices among Smallholder Sheep Farming Households in Ejigbo Local Government Area, Osun State, Nigeria.

## Materials and Methods

### Study area or Experimental location

The research was carried out in Ejigbo Local Government Area of Osun State, Nigeria. The people of the area are predominantly Yoruba by tribe, with migrants from eastern and middle states. The major occupations of the people are farming, trading, artisan and civil service. Ejigbo Local Government Area is bordered in the East, West, North and South by Iwo, Ede, Surulere and Oyo Local Government Areas respectively.

## Experimental Design

### Instrument for Data Collection

A structured interview schedule was used to obtain information on socio-economic characteristics of the smallholder sheep farmers, as well as, housing, nutrition and health management practices of small holder sheep enterprise in the study area.

### Sampling and Sample Selection

The population of the study are the rural households involved in smallholder sheep enterprise. Multistage sampling technique was used to select a sample of one hundred and twenty (120) smallholder sheep farmers from the study area. The first stage involved the random selection of 12 communities where smallholder sheep enterprise are predominant in the local government area, thereafter; ten (10) smallholder sheep farmers were selected from each community to make a total of one hundred and twenty (120) respondents for the study.

### Data Analysis

Data in the study was analysed with both descriptive and inferential statistics. The descriptive statistics used in the study include frequency counts, percentage and mean. The analysis of variance (ANOVA) and Pearson product moment correlation (PPMC) were the inferential statistics employed in the study.

The following hypotheses were tested in the study:

**Hypothesis 1:** There are no significant differences in breeds of sheep kept by the respondents. This hypothesis was tested with ANOVA.

**Hypothesis 2:** There is no significant difference in method of treatment of animal diseases by the respondents. This hypothesis was tested with ANOVA.

**Hypothesis 3:** There is no significant relationship between the religion of the respondents and sheep keeping. This hypothesis was tested with PPMC.

**Hypothesis 4:** There is no significant relationship between the house hold size and flock size of the respondents. This hypothesis was tested with PPMC.

**Hypothesis 5:** There are no significant relationships between animal keeping experience of the respondents and their flock size. This hypothesis was tested with PPMC.

## Result and Discussion

### Socio-economic Characteristics of the Smallholder Sheep Farmers

One of the objectives of the study is to describe the socio-economic characteristics of the smallholder sheep farmers in the study area. The selected socio economic characteristics are age, gender, marital status, household size, years of formal education and sheep farming experience. The result of the descriptive analysis is as presented in the Tables below.

### Age Distribution of the Smallholder Sheep Farmers

Table 1 shows age distribution of the smallholder sheep farmers. The table revealed that majority (94.16%) of the smallholder sheep farmers are in the age range of 46 – 55 years. The mean age is 45.50 years. This implies that economically active people are engaged in smallholder sheep farming in the study area. This result is in line with that of Anaeto *et al.* (2009).

### Gender Distribution of the Smallholder Sheep Farmers

The distribution of the smallholder sheep farmers according to their gender is presented in Table 1. The table reveals that majority (64.17%) of the smallholder sheep farmers were male, while female constitutes about 35.83%. This result implies that smallholder sheep farming is a male dominated business venture in the study area. This result is in contrast with that of Anaeto *et al.* (2009) who reported

that females were involved smallholder sheep production than male.

### **Marital Status Distribution of the Smallholder Sheep Farmers**

Table 1 shows the distribution of the smallholder sheep farmers according to their marital status. The table revealed that the majority (66.67%) of the smallholder farmers were married. This result can be attributed to the fact that smallholder sheep farming is a family enterprise in the study area.

### **Distributions of the Smallholder Sheep Farmers According to their Religion**

Table 1 shows the distribution of the smallholder sheep farmers according to their religion. The data shows that the majority (59.17%) of the respondent practice Islam. This result may be due to high economic value of sheep during the Muslim festivals.

### **Household Size Distribution of the Smallholder Sheep Farmers**

Data in Table 1 shows the distribution of the smallholder sheep farmers according to their household size. Data in the table shows that (65.83%) of the smallholder sheep farmers have between 6 to 10 people in the house hold; with a mean of 8 persons per household.

### **Distribution of the Smallholder Sheep Farmers According to their Years of Formal Education**

Table 1 shows the distribution of the smallholder sheep farmers according to their years of formal education. The table reveals that most (34.18%) of the smallholder

sheep farmers had primary education, while (33.33%) and (32.50%) of the smallholder sheep farmers had tertiary and secondary education respectively. The mean year of formal education is 9.5 years. This result is a reflection of low level of formal education among smallholder sheep farmers in the study area.

### **Distribution of the Smallholder Sheep Farmers According to their Sheep Farming Experience**

Table 1 shows the distribution of the smallholder sheep farmers according to their sheep farming experience. Data in the table reveal that most (65.00%) of the respondents have been keeping small ruminants for over 10 years. This result affirms that sheep farming is not a recent enterprise in the study area.

### **Distribution of the Smallholder Sheep Farmers According to their Flock Size**

Table 1 shows the distribution of the smallholder sheep farmers according to their flock size. The table reveals that majority (55.83%) of the smallholder sheep farmers have a flock size of between 10 to 20 animals; on the average, 15 animals are kept by each farmer.

### **Occupational Distribution of the Smallholder Sheep Farmers**

Data in Table 1 shows occupational distribution of the smallholder sheep farmers in the study area. The table shows that majority (47.06%) of the respondents are traders, while (36.97%) are farmers. The implication of this result is that smallholder sheep farming is a part-time venture in the study area.

### Acquisition of sheep Breeding Flock

Data in Table 2 shows that most (73.55%) of the smallholder sheep farmers sourced their sheep

breeding flock from the open market. This could result in selection of poor breeders, which will ultimately affect performance and productivity of the animals.

**Table 2: Mode of acquisition of sheep breeding flock by smallholder sheep farmers in the study area**

Animal Acquisition	Frequency	Percentage
Inheritance	19	15.70
Market	89	73.55
Others	12	10.75
<b>Total</b>	<b>120</b>	<b>100.00</b>

### Breeds of Sheep Kept by Smallholder Sheep Farmers of the Study Area

Table 3 shows the breeds of sheep kept by the smallholder sheep farmers in the study area. Majority (64.17%) of the respondents keep the West African Dwarf (WAD) sheep, this is followed by Yankasa,

Balami and Uda breeds of 15 per cent, 11 per cent and 9.50 per cent respectively. This result is in line with the geographical distribution of sheep breeds in Nigeria. The West African Dwarf (WAD) sheep is known for surviving in the south western tropical climate due to its ability to withstand adverse weather conditions and its resistance to diseases.

**Table 3: Breeds of sheep kept by smallholder sheep farmers in the study area**

Breed	Frequency	Percentage
Balami	14	11.67
Uda	11	9.17
Yankasa	18	15.00
WAD	77	64.17
<b>Total</b>	<b>120</b>	<b>100.00</b>

### Management of Sheep Flock Housing System

Data in Table 4 shows that (63.33%) of the smallholder sheep farmers in the study area practice free range system, that is, no any form of housing is provided for

the animals. They are left to sleep in the open making them vulnerable to pest, predators and diseases. However, (36.63%) of the respondents provides a shed for the animal to sleep at night, but are left to roam freely during the day.

**Table 4: Housing system**

Housing system	Frequency	Percentage
Free range	76	63.33
Semi- intensive	44	36.67
<b>Total</b>	<b>120</b>	<b>100.00</b>

**Nutrition**

Table 5 reveals that most (35.00 %) of the smallholder sheep farmers in the study area fed their animals with cassava chips. This is followed by grasses, crop

residues and food wastes with 28.33 per cent, 21.67 per cent and 15.00 percent respectively. The cassava chips are fed to the animals in the morning and are left to fend for themselves throughout the day.

**Table 5: Nutrition of sheep**

Feed Type	Frequency	Percentage
Crop residue	26	21.67
Grasses	34	28.33
Food waste	18	15.00
Cassava chips	42	35.00
<b>Total</b>	<b>120</b>	<b>100.00</b>

**Health Management Practices**

**Animal Diseases**

Data in Table 6 shows that the most prevalent disease in the study area is Pestis de Petit Ruminant (PPR) which

has affected (41.67%) of the respondent's animals. This is followed by mastitis, mange and foot and mouth disease with (25.000%), (22.50%) and (10.83%) respectively.

**Table 6: Animal Diseases**

Animal Diseases	Frequency	Percentage
Mange	27	22.50
Mastitis	30	25.00
PPR	50	41.67
Foot and mouth	13	10.83
<b>Total</b>	<b>120</b>	<b>100.00</b>

**Treatment of Diseases**

Data in Table 7 shows the distribution of smallholder sheep farmers according to the method of treatment of their diseased animals. The table reveals that most (58.33%) of the smallholder sheep farmers employed

self-medication, using herbs in the treatment of their diseased animals. However, 40.00 percent of the respondent employed the service of the local veterinary officers to treat their sick animals. Only 1.67 percent of the respondents utilises the local government veterinary clinic.

**Table 7: Method of treatment of diseases**

Method employed	Frequency	Percentage
Self medication (herbs)	70	58.33
Local govt. Vet. clinic	2	1.67
Veterinary (local)	48	40.00
<b>Total</b>	<b>120</b>	<b>100.00</b>

**Animal Marketing**  
**Place of Marketing**

Table 8 shows where the smallholder sheep farmers market their animals. The table indicates that majority

(67.50%) of the smallholder sheep farmers sell their animals at home, while 32.50 per cent of the smallholder sheep farmers took their animals to the market for sale.

**Table 8: Method of marketing**

Place of marketing	Frequency	Percentage
Home	81	67.50
Market	39	32.50
<b>Total</b>	<b>120</b>	<b>100.00</b>

**Mode of Marketing**

Table 9 reveals how the smallholder sheep farmers market their animals. Most (85.95%) of the smallholder sheep farmers market their animals directly while

14.05percent of the smallholder sheep farmers employed the services of the middlemen in the marketing of their animals.

**Table 9: Mode of Marketing**

Mode of Marketing	Frequency	Percentage
Self	103	85.95
Middlemen	17	14.05
<b>Total</b>	<b>120</b>	<b>100.00</b>

**Test of Hypothesis**

The results of the tests of the hypotheses are hereby presented.

**Hypothesis 1:** There are no significant differences in breeds of sheep kept by the smallholder sheep farmers. The results of analysis of variance in Table 10 show

that there is significant difference in breeds of sheep kept by the smallholder sheep farmers in the study area. This is because F calculated (12.3) is greater than the Tabular F value (3.92) at 5% level of significance. This result implies that the WAD breed is the most kept breed relative to other breeds in the study area.

**Table 10: Analysis of variance (ANOVA) test for variation in breeds of sheep kept by the Smallholder sheep farmers in the study area**

Breeds	Mean Score	F-value	Decision	Remarks
Balami	0.45	12.3	Reject H <sub>0</sub>	S
Uda	0.21			
Yankasa	0.11			
WAD	13.80			

Tabular F-value = 3.92 at p = 0.05, S = significant. WAD – West African Dwarf

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**Hypothesis 2:** There is no significant difference in method of treatment of animal diseases by the smallholder sheep farmers in the study area. The results of analysis of variance in Table 11 show that there is significant difference in the methods of sheep diseases

treatment among the smallholder sheep farmers in the study area. This is because F calculated (12.3) is greater than the Tabular F value (3.92) at 5% level of significance. This result implies that majority of the smallholder sheep farmers relies on self-medication for the treatment of their diseased sheep.

**Table 11: Analysis of variance (ANOVA) test for variation in the method of treatment of sheep diseases by the Smallholder sheep farmers in the study area**

Source of variation	Mean Score	F-value	Decision	Remark
<b>Treatment</b>				
Self	11.09	76.4	Reject H <sub>0</sub>	S
Local govt.	0.24			
Veterinary	0.5			
Tabular F-Value		= 3.92	at p = 0.05	

**Hypothesis 3:** There is no significant relationship between the religion of the smallholder sheep farmers and sheep keeping in the study area. Data in Table 12 show that there is a positive and significant relationship

between the religion of the smallholder sheep farmers and sheep keeping in the study area. This result implies that religion is significant factor influencing the keeping of sheep in the study area.

**Table 12: Relationship between religion of the smallholder sheep farmers and Sheep keeping in the study area.**

Variable	Coefficients (r)	Decision
Religion	0.197	Reject H <sub>0</sub>

Tabular r value = 0.195 at P = 0.05.

**Hypothesis 4:** There is no significant relationship between the house hold size and flock size of the smallholder sheep farmers in the study area. Data in Table 13 show that there is a positive and significant

relationship between the smallholder sheep farmers' household size and their flock size. The implication of this result is that as the household size increases, the herd size also increases.

**Table 13: Relationship between the house hold size and flock size of the smallholder sheep farmers**

Characteristics	Coefficients (r)	Decision
House hold and herd size	-0.245	Reject H <sub>0</sub>

Tabular r value = 0.195 at P = 0.05.



**Hypothesis 5:** There are no significant relationships between animal keeping experience of the smallholder sheep farmers and their flock size.

Data in Table 14 show that there is a positive and significant relationship between animal keeping

experience and the flock size of the smallholder sheep farmers. The implication of this result is that smallholder sheep farmers herd size increases with increase in their sheep handling and management experience.

**Table 14: Relationship between animal keeping experience and the flock size of the smallholder sheep farmers**

Characteristics	Coefficients (r)	Decision
Animal keeping experience and Flock size	-0.497	Reject H <sub>0</sub>

Tabular r value = 0.195 at P = 0.05.

Source: Data Analysis, 2015

### Conclusion and Recommendation

This study surveyed the keeping of sheep in Ejigbo Local Government Area, Osun State, Nigeria. From the results of data analysis and hypotheses testing, this study concluded that poor livestock management practices among smallholder sheep farmers could limit the performance and profitability of the sheep enterprise; hence smallholder sheep farmers should be encouraged to adopt improved livestock management practices to increase their productivity.

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**Table 1: Socio-economic characteristics of the smallholder sheep farmers (n = 120)**

<b>Variables</b>	<b>Frequency</b>	<b>Percentage</b>
<b>Age (Years)</b>		
35-45	28	23.34
46-55	52	43.32
56-65	35	29.19
66-75	5	4.16
<b>Gender</b>		
Male	77	64.17
Female	43	35.83
<b>Marital status</b>		
Single	4	3.33
Married	80	66.67
Separated	17	14.17
Divorced	9	7.50
Widowed	10	8.33
<b>Religion</b>		
Islam	71	59.17
Christianity	41	34.17
Traditional	8	6.67
<b>Household size</b>		
1-5	31	26.67
6-10	79	72.50
Above 10	10	0.83
<b>Years of formal education</b>		
0-6	41	34.16
6-12	39	32.50
12-18	40	33.33
<b>Sheep farming experience</b>		
1-5 years	1	0.83
6-10 years	41	34.17
Above 10 years	77	65.00
<b>Flock size</b>		
5-10	34	28.33
11-20	67	55.83
Above 20	19	15.83
<b>Primary occupation</b>		
Farming	44	36.97
Trading	56	47.06
Artisan	17	14.29
Civil servants	3	1.68

Mean age = 45.50 years, Household size mean = 8 persons, Mean years of formal education = 9.50 years, Mean sheep farming experience = 12.5 years, Mean flock size = 15