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(RESEARCH ARTICLE)



Flock ownership pattern of goats in Idah local government area of Kogi State, Nigeria

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Abstract

Questionnaires were used to obtain data on goat ownership from farmers, determine socio-economic characteristics of owners, identify management system, identify sources of stock and reasons for keeping goats in Idah Local Government Area (LGA) of Kogi State, Nigeria. One hundred (100) goat owners randomly selected from the council wards in the LGA were interviewed using questionnaires. Ninety-two (92) questionnaires were recovered from the field. Data collected included demographic information on the respondents, management practices, herd size, choice of management system, sources of feed and stock, and preference for a particular species. 58.7% of the respondents were male while 41.3% female. 46.8% were married, 9.8% widowed, 29.3% single and 14.1% divorced. Most of the goat owners were between 20-30 years old (26.8%), 22.9% 31-40 years old, 10.9 51-60 years old. 8.7% had primary level education, 18.5% secondary school education and 37% tertiary education. Majority of the respondents (43.6%) had herd sizes between 1-10, with 83.7% of the goats being male and 75.1% female. Management system was mostly extensive (59.8%). Patterns of housing for goats are the open space (53.3%), low cost (18.3%) and open type with run space (23.3%). Choice of housing and management system is dueto low cost. Sources of feed for goats varied from crop residues (30.4%), purchase (10.9%), cut and carry (28.3%) and a combination of crop residue and cut and purchase (30.4%). 40.2%obtained their stock through purchase. It is concluded that goat rearing is practiced by all age groups and gender, most of whom were literate. Management system was mostly extensive due to its convenience in terms of labour and capital requirements.

Keywords: Flock; Goat; Idah; Demographic; Pastoralists; Questionnaire

1. Introduction

World population of goats was put at over 875.5 million by FAO in 2011 [1], while the report of National Agricultural Sample Survey cited by [2] said the population of goats in Nigeria was 72.5 million in 2011. [3] had asserted that 80-90% of the nation's livestock is in the hand of small holders or other traditional groups. According to [4] also opined that 99.97% of animals in Nigeria are traditionally managed, while [5] had reported a mean size of 6.2 goats per goat farmer in Anambra State, Nigeria. [6] had also reported that 72.6% of goat owners in Oyo State, Nigeria had below ten (10) goats. Furthermore, [7] reported that there are 5.7 goats per compound in Nigeria. According to [8], any effort to raise the level of meat production in Nigeria must take into consideration farming communities. The Authors added that about 80 - 90% of cattle in Nigeria are in the hands of nomadic Fulanis or pastoralists, while sheep and goats are in the hands of small holder farmers (men, women and children) in Nigerian villages and peri-urban areas. Goats do not compete with humans, or poultry for food because they can subsist on forage alone and require little grain or concentrates for good production. Therefore, meat from small ruminants should be available at lower prices because of

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their greater efficiency on no-grain diets than beef or pork and possibly poultry. Small ruminants produce about twice as much meat per animal unit in the tropics than cattle [9].

In Africa goats contributed 8.4% total meat production, while they contributed 18.2% of the world total amount of milk [10]. [8] had reported that farmers in Ikenne Local Government Area of Nigeria fed their animals with kitchen waste and 74.7% fed cassava peels at least once a day, without including concentrate and mineral supplement in the diet of the animals. According to [11], small ruminants in tropical Africa are kept under traditional extensive systems. In the arid and sub-humid zones, cattle are reared with sheep and/or goats, while in the humid zone; they graze freely, with access to household and kitchen wastes when available. This study was necessary in order to generate and document baseline data on the flock ownership pattern for goat farmers in Idah Local Government Area of Nigeria, which would also serve as reference material for extension agents and farmers involved in planning and production of certified animals and animal products.

1.1. Objectives of the study

The objectives of the study were;

- To obtain baseline data on flock ownership pattern for goat in Idah Local Government Area of Kogi State.
- To determine the socio-economic characteristics of goat farmers in the area.
- To identify the management system of goats in the area.
- To identify sources of stock and reasons for keeping goats in the area.

2. Material and methods

The study was conducted in Idah Local Government Area of Kogi State, Nigeria. Idah lies on latitude 7°6' 0" North, 6° 44'0"East and has a total landmass of 36km² [Map-Satellite images of Idah.<http://www.mapland.cpm/nigeria/kogi/Idah/Idah/>, last accessed on 19/12/2019] characterized by tropical wet and dry climate. According to the 2006 census, the Local Government Area has a population figure of 79,815 [Nigeria Data Portal. <https://nigeria.open-dataforafrica.org/ifpbxbd/state-population-2006>, last accessed 20/1/2020]. The Local Government, falls into the guinea savannah zone.

2.1. Interviews

Based on a formal questionnaire, interviews were conducted with 100 farmers randomly selected from the council wards in the Local Government Area. The respondents in all cases were the owners of goats. One hundred questionnaires were administered to respondents in the various wards of the Local Government Area, while 92 questionnaires were recovered from the field.

2.2. Data collection

The instrument used for data collection was structured questionnaires. Primary data was collected by the administration of structured questionnaires to the agro-pastoral farmers in the study area. Data collected included demographic information on the respondents, management practices used, flock and herd size, choice of management system, sources of feed and stock, and preference for a particular species.

2.3. Data analysis

The data collected were analyzed using descriptive statistics; frequencies and percentages using the Statistical Package for Social Sciences (SPSS) version 16.0.

3. Results and discussion

3.1. Socio-economic characteristics of goat farmers in Idah local government area

The results of the socio economic characteristics of small ruminant farmers are given in Table 1 and Table 2.

Table 1 Socio-economic characteristics of goat farmers in Idah local government area

Variable	Frequency	Percentage
Age		
20-30	23	26.8
31-40	21	22.9
41-50	21	22.9
51-60	10	10.9
61 & above	17	16.5
Total	92	100
Gender		
Male	54	58.7
Female	38	41.3
Total	92	100
Marital status		
Single	27	29.3
Married	43	46.8
Divorced	13	14.1
Widowed	9	9.8
Total	92	100
Level of education		
No education formal	12	13
Adult education	21	22.8
Primary	8	8.7
Secondary	17	18.5
Tertiary	34	37
Total	92	100

Field survey, 2018

Table 2 Socio-economic characteristics of goat farmers in Idah local government area

Variable	Frequency	Percentage
Years of keeping goats		
≤ 5	23	25
6-10	31	33.6
11-15	19	20.7
16-20	10	10.9
21-25	7	5.5
26-30	2	4.3
Total	92	100

Household size		
1-5	32	34.9
6-10	49	53.3
11-15	9	9.8
16-20	2	2
Total	92	100
Occupation		
Farming	23	25
Trading	17	18.5
Artisan	8	8.7
Civil service	16	17.4
Teaching	23	25
Others	5	5.4
Total	92	100
Years spent in occupation		
1-10	45	49
11-20	30	32.7
21-30	8	8.7
31-40	7	7.6
41 & above	2	2
Total	92	100
Household monthly income		
10,000-20,000	22	23.9
21,000-30,000	27	29.4
31,000-40,000	13	14.1
41,000-50,000	11	11.9
51,000-60,000	5	5.5
61,000-70,000	2	2.2
71,000& above	12	13

Field survey, 2018

3.2. Socio-economic characteristics of the respondents

Table1 and Table 2 show the socio-economic characteristics of the respondents in the sampled population. From the total number of ninety two (92) respondents, 58.7% were male while 41.3% were female. This observation is however at variance with earlier report by [12] that woman owned 60% of all small ruminants in tropical Africa. Observed results indicated that most of the goat farmers were married, that is, 46.8%, while 9.8% were widowed, 29.3% were single and 14.1% were divorced. Most of the goat farmers (owners) were between 20-30 years old (26.8%), 22.9% for 31-40, years old, 10.9 for 51-60 years old. This indicates that high proportion of the respondents involved in goat production were of the active age range. This may suggest that there is prospect for increased goat production in the area. It was observed that 8.7% of the farmers had primary level of education, 18.5% had secondary school education and 37% had tertiary education. Since a larger proportion of goat owners in the study area possess formal education, it is likely they will be open to new technologies/innovations in goat production. [13] reported similar findings. This also implies that there abound potentials for improved production practices since literate individuals within the active age groups are expected

to be more receptive to new technological innovations. According to [13; 14], education enables individuals to gain knowledge and skills and this increase their power of understanding.

Respondents are diversified in their occupations. The highest proportions of goat farmers in the area are farmers or teachers (25%). This observation appears to indicate that it is more convenient for crop farmers and teachers to engage in rearing of goats than other forms of occupation. Crop farmers may have been encouraged to engage in goat farming as a mean of harnessing the generated crop residues, while more teachers may practice goat rearing due to the fact that they spend less number of hours at work than artisans, traders and civil servants.

Table 3 Flock size, sex and management system of goats in Idah local government area

Variable	Frequency	Percentage
Flock size		
1-10	40	43.6
11-20	24	26.1
21-30	14	15.3
31-40	4	4.4
41-50	4	4.4
51-60	2	2.2
61 & above	4	4
Total	92	100
Number of male (adult)		
1-10	77	83.7
11-20	10	10.9
21-30	2	2.2
31-40	3	3.3
Total	92	100
Number of female (adult)		
1-10	69	75.1
11-20	18	19.7
21-30	3	3.3
31-40	2	2
Total	92	100
Number of kids		
1-5	62	67.3
6-10	17	18.5
11-15	7	7.6
16-20	5	5.4
21& above	1	1.1
Total	92	100

Field survey, 2018

Table 4 Flock size, sex and management system of goats in Idah local government area

Variable	Frequency	Percentage
Sex of kids		
Male	14	15.2
Female	21	22.8
Male & Female	57	62
Total	92	100
System of management		
Intensive	9	9.8
Extensive	55	59.8
Semi-intensive	28	30.4
Total	92	100
Pattern of housing		
Low cost housing	17	18.5
Open type housing with run space	26	23.3
Open space housing	49	53.3
Total	92	100
Reason for choice of management system		
Convenience	21	22.8
Low cost of management	33	35.9
More secured	19	20.7
Tradition	14	15.2
All the above reasons	5	5.5
Total	92	100
Sources of feed		
Crop residue	28	30.4
Purchase of feed	10	10.9
Crop residue & purchase of feed	28	30.4
Cut and carry	26	28.3
Total	92	100

Field survey, 2018

3.3. Flock sizes, sex and management system

Table 3 and Table 4 show flock size, sex and management system of goats in Idah Local Government Area. It was observed that majority of the respondents (43.6%) had flock size between 1-10, with 83.7% of the goats being male and 75.1% female. It can be deduced that most of the goat farmers within the study area are not engaged in commercial farming of goats. This observation seems to confirm that the structure of the Nigerian livestock industry is such that 80-90 of the nation's livestock lies in the hands of small-holders or other traditional groups

[3]. [6] had earlier reported that most (72.6%) goat farmers in Oyo State kept less than 10 goats. [5] reported a mean herd size of 6.2 in Anambra State. Observed result for sex ratio of goat is almost 1.11:1 for male to female. This may suggest that a number of these male goats may be put up for sale for meat production since they may not be required for breeding purpose.

Management systems adopted by goat farmers in the study location can be classified into three namely; intensive, semi-intensive and extensive with percentage occurrence of 9.8%, 30.4% and 59.8% respectively. Extensive system was practiced by 59.8% of the farmers. Most of the goats in the area may therefore be exposed to adverse environmental conditions, theft, uncontrolled mating and accident among others.

The patterns of housing for goats in the study area are the open space (53.3%), low cost (18.3%) and open type with run space (23.3%). The major reason for choice of housing and management system in the study area is low cost of management (35.9%). The sources of feed for goats ranged from crop residues (30.4%), purchase (10.9%), cut and carry (28.3%) and a combination of crop residue and cut and purchase (30.4%).

Table 5 Sources of stock and reasons for keeping goats in Idah local government area

Variable	Frequency	Percentage
Sources of stock		
Inheritance	30	32.6
Purchase	37	40.2
Gift	25	27.2
Total	92	100
Reasons for keeping goat		
Easy to keep	18	19.6
Hardiness	9	9.8
High demand	23	25
Festivity	25	27.2
Prolificacy	17	18.5
Total	92	100

Field survey, 2018

3.4. Sources and reasons for keeping of small ruminants by the respondents

Table 5 shows the sources and reasons for keeping of goats by the respondents. The results obtained revealed that most of the goat farmers obtained their stock through purchase (40.2%). However, 32.6% of the respondents acquired their stock through inheritance. Acquisition through gift was 27.2%. The high proportion of acquisition through purchase may suggest high interest in goat keeping, due to some perceived potentials namely; store of wealth, festivity (27.2%), high demand (25%), prolificacy (18.5%) and ease of keeping (19.6%). In addition, it may also indicate that goats are highly valued in the study area.

4. Conclusion

It is concluded that goat rearing is practiced by all age groups and gender most of whom were literate. The production system mainly involved the extensive system of management. This practice was inherited and convenient in terms of labour and capital requirements. Goats were mainly reared for sale during festive seasons and due to high demand in the area. It is recommended that livestock improvement strategies for goat farming should be given attention to help upgrade goat production from the present peasantry level for better productivity and profitability. If achieved, this could go a long way in alleviating poverty particularly among the teeming populace.

Compliance with ethical standards

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Disclosure of conflict of interest

The authors: Benjamin Osigbodi Oyewole, Joseph OchocheEgahi and Augustine AdajiAkoh hereby declare that there is no conflict of interest.

Statement of informed consent

The authors wish to state that informed consent was obtained from individual participants at the time of the survey.

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