



Management Practices and Problems of Sheep Farmers in Oru West Local Government Area of Imo State, Nigeria

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Abstract

A study was conducted in Oru West Local Government Area of Imo State, Nigeria to assess the sheep production systems and the major problems faced by farmers in the management of their sheep flocks. The survey was done in some selected communities in the study area. Majority of the farmers sourced their stock from the open market and none indicated to have sourced from institutional farms where modern breeding techniques are employed. Flock size ranged from 5 – 50 animals (mean flock size was 12.8). Fifty eight percent of the farmers rear purely West African Dwarf breed and more breeding ewes were kept than rams. Sheep are kept for generating family income, for use during religious/traditional rites, meat and milk in that order. Farmers had preference for keeping particular breed of sheep for varied reasons which included multiple births, adaptation to environment, good temperament, good mothering ability and lactation. Major problems identified as hampering the productivity of the sheep production in the area were high cost of feeds, seasonality of feeds, inadequate extension services, disease and vaccination problems and the high cost of veterinary care.

Keywords: Sheep production; Breeding techniques; Breeds; Environment; Seasonality and Productivity

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 (Ahaotu, 2018). 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 (Alionye *et al.*, 2020).

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 (Getachew *et al.* 2010).

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. Majority of the sheep population in the country are owned by small-holder rural livestock farmers (Ahaotu *et al.*, 2017). Sheep and goats constitute a good source of family income and livelihood, assets and agricultural resources for smallholder farmers (Okafor, 2010). This makes small ruminant farming an important and secured form of agricultural investment to the Nigerian rural and urban farmers. This observation was further buttressed by Ceyhan and Karem (2010), who reported that livestock and livestock products particularly from small ruminants accounted for 56% in value terms (income) in typical smallholder mixed farming settings. This again underlines the valuable contribution of small ruminants as income generating assets among small-holder livestock farmers (Shittu *et al.* 2008; Ahaotu and Ifut, 2018). They are kept mainly as a secondary investment and require minimal input.

Integration of sheep with crop agriculture usually occurs under subsistence conditions on small-scale farmers. They form an integral part of the system, providing milk, meat, manure and cash to the farm family during the time of need. Sheep and goats are efficiently reared on marginal lands and are good users of crop residues (Opara, 2010). As such, they provide the only practical means of using vast areas of natural grasslands in regions, where crop production is almost impracticable (Nlemadim, 2010). Small ruminants have been reported to be prolific (Thonney and Hogue, 2007) and need only short gestation periods to increase flock size. This therefore makes traditional small ruminant production system a low input but high output enterprise with predictable profitability and economic returns (Emokoro and Amadasun, 2012).

Sheep contribute enormously to the protein requirements of most developing countries (Ahaotu *et al.* 2009). In Sub-Saharan

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Africa, sheep provide almost 30% of the meat consumed and around 16% of the milk produced. Yakaka and Bashir (2012) estimated that sheep and goats contribute about 35% of the total animal meat production in Nigeria. This ranks small ruminants as the second most important suppliers of meat protein to the population after cattle (Ugwumba and Effiong, 2013).

Despite the enormous contributions of the small holder farmer to the Nigeria's livestock economy and development programs, and in spite of the special attributes possessed by small ruminants, the productivity potential of these animals is yet to be fully exploited (Yakaka and Bashir, 2012). Some of these productivity attributes include the ability of small ruminants to highly adapt to a broad range of environments utilizing a wide variety of plant species (Okafor, 2010), as well as not being prone to high feed competition with other species like cattle and camels (Opara, 2010). Due to their short generation time (gestation period) and high fecundity (Nlemadim, 2010), sheep are generally known to have high production efficiency. During periods of unpredictable food shortage, sheep have proven very useful to human beings in the supply of meat and milk products (Madubuiké, 2012). This study aimed at assessing the management practices of sheep production in terms of source of flock, feeds and feeding, flock size, herd structure, reasons for keeping sheep as well as the major constraints to production in the study area.

Materials and Methods

Study area

The study was conducted in Oru West Local Government Area of Imo State. Oru West is a Local Government Area of Imo State, Nigeria. Mgbidi is the headquarters of Oru West, a local government area of Imo State in southeastern Nigeria. It has an area of 93 km² and a population of 117,492 at the 2006 census. It is located at latitude 5.37° N and longitude 6.57° E.

Mgbidi is one of the oldest towns in Imo State. It is bounded in the North by Ibi-Asoegbe and Aji, on the East by Amiri and Otulu, in the West by Ozara, and in the South by Oguta LGA and Awo-omamma. Mgbidi is located in the far North of Imo State, which is why it is bounded by Amorka in Ihiala LGA of Anambra State. Awbana River originates from Mgbidi and drains into Oguta Lake, forming one of its tributaries.

The climate of the state is typically humid with two major distinct seasons, namely, the wet and dry Seasons. The wet season starts from April and ends in October but could extend to with a mean annual rainfall of between 500 mm and 1300 mm. Peak rainfall is reached in July. Dry season starts from November with the cold, dry, dust- laden harmattan wind lasting till February. The main occupation of the people in the study area is farming. The major crops grown in the state include maize, cowpea, cassava, pepper, tomato and green vegetables like garden egg, melon, fluted pumpkin, cucumber and okra.

The state is a major livestock producer. The rainfall distribution pattern and the tropical equatorial climate of the area give rise to two distinct seasons namely; rainy seasons from March to September and dry seasons from October to February. The vegetation of the area is characterized by thick forest. The climate and rainfall distribution pattern makes the area suitable

for agricultural production. The population is predominantly farmers who engage themselves in the rearing of livestock's and cultivation of crops. Apart from farming, some people also engage in other works such as civil service, teaching, trading and artisan. Imo state was stratified into the existing three agricultural zones.

Sampling Frame

For the purpose of this study, and to ensure a good representation in the administration of questionnaires, two villages from ten major towns were randomly selected by balloting using random sampling technique. This was followed by identifying the sheep flocks in each of the town selected, using records from the Agricultural Development Programme (ADP) and the local government agricultural departments. Relevant information was obtained from the ward heads and other sheep stock owners.

One hundred (100) questionnaires were distributed out to flock owners in the selected towns. The administrations of the questionnaires were spanned over a period of two months. Information which was gathered using the questionnaire included breeds of sheep, sources of stock, flock size, management system, age and sex distribution of the flocks. Others were reasons for keeping sheep, knowledge and utilization of veterinary care, common prevalent diseases encountered, constraints faced by farmers as well as the required solutions to those constraints.

Data analysis

Data generated from the various this survey were presented as tables, figures and percentages.

Results and Discussion

Management systems and practices

The system of agricultural production in the area is predominantly a mixture of crop livestock system with respondents cultivating cereal crops as well as keeping animals side by side. This is a system that has been well reported by several authors (Ahmed and Egwu, 2014; Sanni *et al.* 2004, Whitter *et al.*, 2003, Ajala *et al.*, 2003). Analysis of the sheep management system in the area indicated that 144 (59.50%) of the respondents kept their sheep under semi-intensive system of management, followed 89 (36.80%) who practice extensive system. Only 9 (3.70%) respondents practice intensive system (Table 1).

This finding agreed with that of (Ayo-Enwerem *et al.*, 2008; 2009 and Nlemadim, 2010) but is in contrast to the results of (Kannan *et al.*, 2002; Hermann-Hoesing *et al.*, 2007 and Opara, 2010) who posited that 62% of farmers in his study practice extensive system as against 29% who kept their sheep under semi-intensive system of management. The variation may be explained by the relative importance to which sheep production is given in this area of study compared to that of (Torrens *et al.*, 2019 and Opara 2010). Here in Imo state, rams are kept and offered some supplementary feeding for fattening and sold off during religious occasions at which time high premium is attached to these animals, hence the intensification so as to achieve the desired result.



Table 1: Sheep Management System Based on Agricultural Zones in Imo State, Nigeria.

Agricultural Zones					
Management	Amaofo	Eleh	Ozara	Nempi	Total
(%)					
Systems					
Extensive	29	14	25	21	89 (36.80)
	(43.94)	(22.22)	(48.08)	(34.43)	
Semi Intensive	36	45	26	37	144 (59.50)
	(54.54)	(71.43)	(50.10)	(60.65)	
Intensive	1	4	1	3	9 (3.70)
	(1.52)	(6.35)	(1.92)	(4.92)	
Total	66	63	52	61	242 (100)
	(27.27)	(26.03)	(21.49)	(25.21)	

Figures in brackets () denotes the percentages.

Sources and composition of flocks

From the study undertaken, 178 (68.46%) respondents sourced their stock from the market while 59 (27.7%) obtained their sheep from the nomadic Fulani pastoralists. Some 19 (7.31%) respondents and another 3 acquired their stock from gift/inheritance and backyard holdings respectively. The relative ease with which farmers could purchase their animals from the market might have accounted for its being a preferred source of stock. Alternatively, it may be a cheaper source and trade point for a variety of sheep choices (Table 2).

In the study, flock sizes ranged from 5 animals to over 50 per flock with a high percentage of the respondents 71.20% keeping between 6–20 animals. This clearly indicates that smallholder sheep production is common in the state. This is consistent with the observations of Opara (2010) in Imo state. The relatively small sizes of flocks as seen in the present study can be explained by the management system practiced in the study areas which is predominantly extensive or semi intensive in nature (Taylor *et al.*, 2009; Kaufman *et al.*, 2006 and Shittu *et al.*, 2008).

Moreover, within the socio-economic context in which the farmers operate, flock numbers are usually low because they can be better managed and also it is within the capabilities of women and children who generally provide much of the labour required for easy expansion of their flocks (Mbilu *et al.*, 2007 and Ahaotu *et al.*, 2017).

Purpose of keeping sheep

Small ruminants play a significant role in the life of man whether in the rural or urban areas in a variety of ways. From the results of the four agricultural zones in this study, the predominant reason for keeping sheep by majority of the farmers (54.5%) is as a source of money to supplement family income. Some (34.8%) of farmers kept sheep for use during traditional/traditional festivities and only 10% of the respondents actually raised sheep for direct consumption. The result shows that most farmers keep sheep for sales in order to meet family expenditures (Table 3). This finding is similar with that of Gebretsadik *et al.* (2012). Such animals are sold to raise money needed to pay off loan, purchase farm inputs like fertilizer and other household needs, replace

large ruminants, even pay the school fees of children and to solve other immediate family needs. Small ruminant farming and in particular sheep farming, can thus be said to be profitable in this study area.

Type of housing

Information on the type of housing provided for their flocks showed 62.81% of farmers from all the zones provided fenced areas around their compounds or backyard as housing for their flocks. This finding is in consonance with the earlier reports of (Sanni *et al.* 2004; Mekuriaw *et al.* 2012; Ahaotu and Akagha, 2020). Fenced areas are provided during the day to prevent animals from going into farmlands during the cropping season to avoid damage to crops. However Okafor, (2010) stated that structures can hardly protect animals from the harsh weather condition during the cold harmattan season and the intense heat during hot season. On the other hand, 35.13% of the farmers allowed their sheep to roam and graze freely. This is characteristics of extensive system of management and in these situations; there is no input into feeding and veterinary health.

Feeds and feeding of sheep

On the type of feeds offered to their sheep, it was found out that 36.91%, 43.08%, 32.73% and 32.35% of the farmers from the respective zones (Amaofo, Eleh, Ozara and Nempi) indicated supplementing their animal feeds with mixture of concentrate plus hay, legume and crop residues. Additionally, fresh forage is also been cut (cut and carry) and fed to the animals especially during rainy season. This outcome suggests that the farmers have some knowledge of intensification of their stock, particularly since the practice of fattening of rams for future market sales is a common practice in the area.

Besides, as indicated by Ahaotu (1991) and NRC (2007), the scarcity of forage and drinking water during the long dry season makes it imperative for farmers to look for ways of supplementing their animals for better performance and growth.

Diseases encountered

The findings emanating from this study indicated that the major common diseases encountered in various flocks in order



Table 2: Sources and Acquisition of Flocks according to Agricultural Zones in Imo state, Nigeria.

Agricultural Zones					
Source	Amaofo	Eleh	Ozara	Nempi	Total
Backyard	0	3	0	0	3
Government					
Institution	0	0	0	0	0
Sheep Farmers	21	6	17	15	59
Market	44	53	43	38	178
Gift	4	8	6	2	20
Total	69	70	66	55	260

Table 3: Reasons for keeping sheep among flock owners in Imo State, Nigeria.

Reasons	Frequency	Total %
Source of Meat	38	10.2
Source of Milk	2	0.5
Market Sales	204	54.5
Festivities	130	34.8
Total	374	100.0%

Table 4: Common diseases/conditions of sheep encountered in various agricultural zones in Oru West Local Government Area of Imo State, Nigeria.

Diseases	Agricultural Zones				Total (%)
	Amaofo	Eleh	Ozara	Nempi	
Pneumonia	44(23.91)	39(27.66)	17(11.57)	38(19.39)	138(20.66)
Abortion	23(12.50)	12(8.51)	18(12.24)	26(13.26)	79(11.83)
Helminthosis	43(23.36)	49(34.75)	30(20.41)	47(24.00)	169(25.30)
Trypanosomiasis	0(0.00)	2(1.42)	1(0.68)	0(0.00)	3(0.45)
Sheep pox	4(2.20)	1(0.71)	13(8.84)	17(8.67)	35(5.24)
Toxaemia	10(5.43)	11(7.80)	10(6.80)	13(6.63)	44(6.59)
Mastitis	8(4.43)	2(1.42)	17(11.57)	17(8.67)	44(6.59)
PPR	3(1.63)	4(2.84)	0(0.00)	9(4.59)	16(2.39)
Diarrhoea	49(23.63)	21(14.89)	41(27.89)	29(14.79)	140(20.59)
Total	184	141	147	196	668

Figures in brackets () denotes the percentages.

of significance were helminthosis, diarrhea, pneumonia and abortions (Table 4). No farmer reported any history or record of vaccination against diseases in small ruminants in the study area. Although a high majority of farmers claimed to be consulting veterinary doctors to treat their sick animals, the high prevalence of these conditions in this study area could be as a result of poor management and lack of veterinary health care given to the animals in those flocks. The doctors consulted may not necessarily be doctors but just veterinary staff (para-veterinary staff). This, thus, underscores the need for improved veterinary health care inputs which as reported by Ahaotu *et al.*, (2009) in the study area, is grossly inadequate among farmers.

Studies by Ahaotu *et al.*, (2020); Iyayi and Tona (2004) in

other areas indicated that mange, diarrhea and foot and mouth disease were commonest conditions affecting sheep. This is in contrast with the present study and could be attributed to differences in the geographical location and therefore climate of the two study areas.

Problems and Possible Remedies to Sheep Farming in Area of Study

An array of factors were perceived and presented by the respondents in the study area as being the major constraints to sheep production. These constraints included cost of feed (19.6%), seasonality of feed (17.7%), inadequate extension services (14.9%), disease and vaccination problem (14.2%),



Table 5 Major Problems Faced by Flock Owners in Oru West Local Government Area of Imo State, Nigeria.

Problems	Frequencies	Total (%)
Cost of Feed	171	19.6
Cost of Veterinary Care	100	11.5
Seasonality of Feed	154	17.7
Weather / Climate	87	10.0
Scarcity of Water	10	1.1
Inadequate Extension Service	130	14.9
Disease / Vaccination Programme	124	14.2
Theft and Accidents	80	9.2
Cost of Feed and Seasonality of Feed	7	0.8
Scavengers	9	1.0
Total	872	100

Table 6: Inputs required by farmers across Oru West Local Government Area of Imo State, Nigeria for improved Sheep Husbandry.

Input	Frequency	Total (%)
Improved Extension Service	149	20.8
More Grazing Areas	98	13.7
Subsidized Feeds	148	20.7
Sheep Milk Consumption	10	1.4
Loan	115	16.1
Sheep Multiplication Centers	5	0.7
Improved Veterinary Health Care	166	23.2
Subsidized Drugs	25	3.5
Total	716	100

cost of veterinary care (11.5%) and weather/climate (10.0%). These findings agree with the reports of (Iyayi and Tona 2004; Ahaotu *et al.*, (2017) as well as Shittu *et al.*, (2008) who identified these factors as problems to sheep production in Nigeria. Other problems listed by farmers included scarcity of water, thefts and accidents and scavengers.

These problems could be addressed collectively by farmers coming together to form cooperatives groups with the assistance of government. Possible solutions to these constraints proffered by sheep farmers included improved veterinary health care services, improved extension service, provision of feed sources and soft loan from government. The majority of farmers in the study indicated that they require improved veterinary health care services. This underscores the need for improvement in veterinary extension services.

Conclusion

The sheep production system is predominantly extensive and semi-intensive in the study area. Under these systems of production, inputs into veterinary health care and nutrition of animals are grossly inadequate. This coupled with the prolonged dry season means that sheep are inadequately fed culminating into malnutrition and limiting the ability of these animals to bear and foster lambs. Major constraints such as high cost of feed, seasonality of feeds, inadequate extension service that sheep owners faced and militates against their ability to manage their

sheep in Sokoto state were identified, so also were the possible solutions like better extension services, subsidized veterinary drugs and soft loans that could help the farmers alleviate these constraints.

Recommendations

- The process of providing of extension services need to be strengthened at the local level so that sheep owners can get access to information on ways of rearing and improving their flock management.
- Government needs to find ways of developing low-interest credit and inputs supply arrangement/scheme that those farmers can easily access.
- Sheep farmers need to be encouraged to form cooperative societies so that they can constitute a formidable group that can approach government agencies on the way forward in addressing their major problems.

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