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Sheep and goat farming in Imo state Southeast Nigeria: A traditional vocation at the verge of extinction?

[1]Anyanwu, N. J., [1]Ogualu, J. O., [1]Odoemelam, V. U., [3]Kalio, G. A. and [2]Ekpe, I. I.
[1]*Department of Animal Science and Technology, Federal University of Technology, Owerri*
[2]*Department of soil science, Federal University of Technology, Owerri*
[3]*Department of Agric. Science, Ignatius Njuru University of Education, Port Harcourt*

Abstract

Since prehistoric times, sheep and goat farming has been an integral part of the farming system of the people of South east Nigeria. This study investigated the current state of sheep and goat farming amongst households in Imo State south eastern Nigeria. A total of one hundred and fifty (150) structured questionnaires were distributed to farmers randomly selected from three Local Government Areas (LGAs) in Imo state namely, Oru West, Ahiazu Mbaise and Ezinihitte Mbaise to determine the socio-economic characteristics, production systems, breeding and reproduction, constraints and strategies for economic improvement in a focus group interview. Only 89 farmers were available for interview. The results revealed significant decline in sheep and goat farming amongst the households across four generations within the households interviewed. Lack of interest due to poor policy framework, low productivity of existing breeds, difficulty in feed supply and high cost of breeding stock was identified as constraints of sheep and goat production in thiese areas. It was also observed that older people were more directly involved in sheep and goat farming than youths. 59.6% of the farmers were females, and 31-50% of the farmers were between the ages of 31 and 50 years. Farming was the most common occupation amongst the households while trading was the next. Results also showed that 76.4% of the communities had history of sheep and goat keeping whereas 73% of the total families interviewed had a history of sheep and goat keeping. It was also observed that 33.7% of households were involved in poultry enterprise and 25.3% involved in fish farming. Only 4.8% engaged in sheep and goat farming. Results obtained also revealed that 48.3% of the identified sheep and goat farmers kept breeds of sheep and goat from northern Nigeria while 40.4% maintained the west African dwarf breed. 34% of respondents believed that access to grants and credit facilities, 25 % believed provision of land in urban areas, while 21% believed improvement in small ruminant feed technology, would improve production. Lambing and kidding was mostly twice a year (48.3%). Breeding was mostly observed to be uncontrolled (51.7%). Also, the results showed that, 59.6% of the farmers were willing to pay for veterinary services. The most important diseases within these areas were worms, ecto-parasites and peste des petits ruminants (PPR). It can be inferred from the study that farmers within the region appear to pay greater emphasis on poultry production and fish farming to the detriment of smallholder sheep and goat farming which could be attributed to poor knowledge of sheep and goat farming technologies resulting to low productivity.

Keywords: sheep and goat farming, south eastern Nigeria, West African dwarf breed, extension services

Imtroduction

Sheep and goats represent the predominant ruminant animals in South eastern Nigeria and the West African dwarf breed is indigenous to this area. In terms of contribution to house hold meat supply by aggregate demand, goat meat is second to beef followed by poultry (Aborishade and

Carpio, 2017). Regrettably, over 90% of animals slaughtered within the region are supplied from northern Nigeria (Francis, 1990). In fact, the West African dwarf breed of sheep and goat just like the West African dwarf cattle, is on the verge of extinction. The West African dwarf breed of sheep and goats are adapted to the humid rainforest zone, along the Atlantic coast, which stretches from Nigeria to Cameroun, Congo to the east, Benin, Togo, Ghana, Liberia up to the Fouta Djallon highlands of the Gambia (Williamson and Payne, 1978). They are typano-tolerant and represent an important component of the crop-livestock farming system of the indigenous population. Besides provision of food, they act as a reserve of wealth, a living bank, a source of income, employment, manure, raw material and part of the social and customary ceremonies. Their size and adaptability and short generation interval make them the most preferred among domestic animals and makes for easy management among women and children. The short generation interval makes them easier to replenish stocks after disease outbreak. It is also a form of insurance against crop failure. Despite these advantages, an important vocation for small holder farmers, is at a danger of extinction. Sheep and goat production is largely concentrated in the hands of small holders who apply little if any, modern techniques required to meet the demand of meat in a fast changing world where technology holds sway. Ownership of small sheep and goats is regarded as an investment since they could be sold to meet compelling family needs and obligations, slaughtered for consumption at home or at festivals. In addition, very little capital investment is required in buildings, maintenance and upkeep and purchase of stock since families could receive initial breeding stock as a gift or tied to joint sharing of offspring. Currently, there are four identified production systems. Subsistence system which is characterized by a small number of holding often less than 5. They are kept in stalls, tethered or allowed to roam about. There is sometimes absence of housing and animals co-habit within the farmers compound on corridors, open kitchen or halls. Sometimes animal's shelter is erected adjacent to the farmers wall or fence. Animals scavenge around the neighborhood unaccompanied, throughout the day searching for feed and water but returns to the owner's home in the evening. They are prone to predators and theft, accidental death by moving vehicles. Extensive system allows the animals to graze and browse large areas of marginal land usually unsuitable for cultivation under the care of a herder. However, this system has given rise to frequent resource conflicts between crop farming communities and migrant herders within the southern parts of Nigeria. It is on the grounds of appraising the current state of production and evolving strategies for economic improvement that this study was initiated.

Materials and methods

The study was conducted in three Local Government Areas (L.G.As) namely; Oru West, Ahiazu Mbaise and Ezinihitte Mbaise. Imo state lies within latitudes 4°45'N and 7°15'N, and longitude s6°50'E and 7°25'E with an area of about 5,100sq km (Wikipedia,). Oru West lies within latitude 5.37° N and longitude 6.57° E. It has an area of 93 km2 (36 sq mi) and a population of 117,492 (NPC, 2006). Ahiazu Mbais**e** is situated within latitude 5° 32' 55.259" N and 7° 16' 8.364" E. It has an area of 114 km² and a population of 170,902 (NPC, 2006). Ezinihitte Mbaise lies between latitude 5° 28' 43.5" (5.4788°) North and longitude 7° 19' 34.5" (7.3263°) East. The study was conducted with the aid of structured questionnaires, using focus group and personal interviews and observations

within the different communities of the three Local Government Areas (LGAs). The communities were selected using a stratified random sampling and thirty respondents were interviewed in Ahiazu and Ezinihitte Mbaise and twenty-nine in Oru West making up a total of eighty-nine (89) respondents overall.

Results and discussions

The results indicated that 71.9% of respondents were rural dwellers, 20.2% peri-urban dwellers and 7.9% urban dwellers showing that the study area was majorly rural. The respondents were within the ages of 21 to over 70 years. While 42.7% were between the ages of 31-50 years, 37.1% were between the ages of 21-30 and 15.7% were between the ages of 51-70 while 4.5% were above 70 years. Results also indicated that there were more females (59.6%) than males (40.4%) as shown in Table 1. 56.2% of respondents were married and 43.8% were single. This may indicate that married couples consider sheep and goat farming as an important source of food and economic security although current production methods may not be attractive to the youths, a development which can be addressed by providing the enabling environment for youths to go into commercial sheep and goat production (Anyanwu *et. al.,* 2010). The educational status of the respondents showed that 32.6% had secondary education while 31.5% had tertiary education. About 16.9% had primary education while 19.1% had no formal education. We can report from this result that most of the respondents were educated. Access to education is related to the capacity of respondents especially women, to use appropriate information and skills for enterprise development and generation (Adeleye *et al.,* 2016). Most of the respondents (51.7%) had household size of between 5 and 10; while 13.7% of the respondents had household size of 11 and 15. It was also recorded that the primary occupation of most of the respondents (49.4%) was farming, 19.1% were involved in trading, 13.5% were civil servants, while 7.9% were students and businessmen, respectively. Furthermore, 53.9% reported farming as secondary occupation, 30.3% as trading. It was also recorded from the study that 84.3% of the total respondents were engaged in agriculture whereas 15.7% were not. This is in agreement with previous reports that agriculture is the major source of livelihood for the rural people in developing countries (FAO, 2008).

Production systems and choice of enterprises

An analysis of the data revealed that 33.7% of the respondents preferred poultry as livestock enterprise of choice, 25.3% fish farming, 18.1% piggery and /marketing respectively while a very small number of respondents (4.8%) indicated sheep and goat as a livestock enterprise of choice. This agreed with the previous report by Okoli *et al.* (2004) that poultry business enterprise in Imo state, Nigeria is attractive and an enterprise of choice where practitioners are willing to continue in throughout their lifetime. Again, 33.7% of the respondents affirmed that they would venture into crop farming if given a startup capital, 25.3% declared marketing of agricultural products as a choice enterprise, 18.1% also chose fishery and others respectively. Whereas a little number of them (4.8%) chose livestock as a choice of enterprise upon having access to loan. It was also recorded that 76.4% of the respondents indicated that their communities had a history of sheep and goat farming while 73% of the households had a family history of sheep and goat keeping. The practice of sheep and goat keeping along the successive generations declined from 48% among the great grandparents, 22% for grandparents, 17% for parents to 11% for the respective respondent. The major reason for sharp

decline in sheep and goat production among the respondents (30.3%) was lack of interest. Other reasons for sharp decline in sheep and goat production (14.6%) was low productivity of existing breeds. 10.1% recorded that lack of innovation in production system and high cost of breeding stock was the major reason for the sharp decline, respectively while incidence of pest and diseases was 7.9% while 5.6% indicated drudgery and high labour involvement. From the above results, it can be reported that low productivity of the existing breeds or sheep and goat and lack of innovation in production system resulted to lack of interest and perhaps the major reasons for sharp decline in sheep and goat production in the study area. About 40.35% of the respondents practiced subsistence system of sheep and goat production while 37.1% practiced intensive system, 16.9% also practiced extensive system and 5.6% also practiced semi-intensive system. This is contrary to the report from Northern Nigeria that small ruminants were mostly managed under extensive system (Ajala and Gefu,2003). The subsistence system confirmed that small ruminants are not kept in commercial sizes and are actually kept to augment family income especially in South eastern Nigeria. The above results are represented in Table 2 below.

Table 1: Socio-economic characteristics of sheep and goat farmers within the study area

Parameters	Class	Frequency	Percentage
LGA	Oru west	29	32.6
	Ahiazu Mbaise	29	32.6
	Ezinihitte	31	34.8
	Total	89	100.0
Locality	Urban	7	7.9
	Peri-urban	18	20.2
	Rural	64	71.9
	Total	89	100.0
Age	21-30	33	37.1
	31-50	38	42.7
	51-70	14	15.7
	Above 70	4	4.5
	Total	89	100.0
Sex	Male	36	40.4
	Female	53	59.6
	Total	89	100.0
Marital Status	Single	39	43.8
	Married	50	56.2
	Total	89	100.0
Level of education	None	17	19.1
	Primary	15	16.9
	Secondary	29	32.6
	Tertiary	28	31.5
	Total	89	100.0
Household size	2	1	1.1
	3	2	2.2
	4	6	6.7
	5	8	9.0

	6	13	14.6
	7	11	12.4
	8	6	6.7
	9	6	6.7
	10	14	15.7
	11	2	2.2
	12	4	4.5
	13	4	4.5
	14	2	2.2
	15	6	6.7
	16	1	1.1
	17	1	1.1
	18	1	1.1
	20	1	1.1
	Total	89	100.0
Primary occupation	**Farming**	**44**	**49.4**
	Trading	17	19.1
	Student	7	7.9
	Business	7	7.9
	Teaching	12	13.5
	Tailor	1	1.1
	Nursing	1	1.1
	Total	89	100.0
Secondary Occupation	Farming	48	53.9
	Trading	27	30.3
	Teaching	3	3.4
	Business	3	3.4
	Tailor	4	4.5
	Private school teacher	2	2.2
	Marketer	1	1.1
	Microbiologist	1	1.1
	Total	89	100.0
Engagement in Agriculture	Yes	75	84.3
	No	14	15.7
	Total	89	100.0

Strategies for economic improvement of sheep and goat farming within the syudy area

The most workable solution to revamp sheep and goat production as consented by the respondents (33.7%) was the advancement of credit facilities. Other workable solutions to revamp sheep and goat production in order of importance were the provision of land by government in peri-urban centres for cluster sheep and goat farming (24.7%), improvement in ruminant feed technology (21.3%), establishment of planted fodder banks (12.4%) and innovation in housing and feeding systems. So, presumably, advancement of credit facilities such as loan or grant to the farmers can be a good workable solution to revamping sheep and goat production in the study area. This can be augmented by government providing land in peri-urban centres for cluster sheep and goat as well as the improvement in ruminant feed technologies. The reports given by the respondents (59.1%) showed

that the total annual income generated from agricultural enterprise per year was below < 120,000 which was below the current minimum wage of public sector workers. Furthermore, 30.7% earned between < 121,000 to < 240,000 while 6.8% reported earnings between < 481,000 to < 1,000,000. This low income reported by these households could be the reason for the declining interest in sheep and goat farming. This could be explained by subsistence production system prevalent in the study area probably due to lack of capital and appropriate technologies to commercialize aspects of the enterprise value chain. 25.8% of the respondents affirmed that delivery of new research technologies to target farmers can best enhance sheep and production in the study area. Furthermore, 24.7% consented that technology can enhance sheep and goat production in the study area through improvement in genetic potential. 14.6% of the respondents reported that access to marketing information by linking farmers with consumers using cell phones can be useful in the technological enhancement of sheep and goat production in the study area. Also, 11.2% affirmed that use of ready-made packaged feeds and modified housing for urban and peri-urban producers can be another innovation to enhancing sheep and goat production in the study area respectively. In addition, only 9.0% reported that oestrus synchronisation can be used to enhance production. Overall, majority of respondents (60 %), agreed that deployment of new technologies holds the key to economic improvement.

Breeding and reproduction of sheep and goats within the study area

Results obtained from the respondents showed that 48.3% kept Northern breeds of sheep and goat, 40.4% kept West African dwarf and only a few number (11%) kept other breeds. This was supported by previous reports that most sheep and goats consumed or kept in the south are introduced from the northern parts of Nigeria (Francis, 1990). Also from above results, we can support the claims that West Africa dwarf sheep and goat are found in the whole area of south Latitude 14°N and humid forest belts of the south (Chukwuma, 2018). Results also revealed that 51.7% of the respondents practiced uncontrolled breeding while 42.7% also practiced controlled breeding. In terms of number of kidding/lambing per year, 48.3% reported twice per year, 29.2% had twice in three years, while 22.4% reported once per year. Furthermore, on the number of offsprings per litter, 42.7% reported twins, 32.6% triplets while 13.5% reported single births while a small fraction 11.2%, reported four kids/lambs at a single birth. This goes to confirm the claims in literature that the West African dwarf goats are prolific and a characterized by multiple births, hence are capable of increasing the size of the individual farmers holding within a very short time. On the prevalence of diseases, respondents reported that 43.8% had worms and emaciation, 32.6% had mange and other ecto-parasites and 19.1% had *peste des petits ruminants* (PPR). This present report has shown that worms and emaciation, mange and ecto-parasites as most common more than PPR. This varies with previous report by Okoli *et al*. (2003), that PPR, trypanosomosis and bronchopneumonia were the important diseases of WAD goats and sheep in Imo State, Nigeria.About 59.6 of the respondents were willing to pay for the services of professional veterinary practitioners for their sheep and goats. This was in agreement with claims by Ahuja and Sen (2006) that farmers exhibit significant willingness to pay for animal health services even in very poor areas. Furthermore, about 60.7 %of the

Table 2: Production systems of sheep and goat farming within the study area

Parameters	Class	Frequency	Percentage
Access to Loan	Crop farming	24	33.7
	Livestock	25	4.8
	Fishery	10	18.1
	Marketing of agri-products	23	25.3
	Others	4	18.1
	Total	86	100.0
Farming Enterprise	Poultry	28	33.7
	Sheep and goat	4	4.8
	Piggery	15	18.1
	Fish farming	21	25.3
	Trading/marketing in livestock	15	18.1
	Total	83	100.0
Community History Of Goat Keeping	Yes	68	76.4
	No	21	23.6
	Total	89	100.0
Family History Of Goat Keeping	Yes	65	73.0
	No	24	27.0
	Total	89	100.0
Generational history of sheep and goat keeping	Great grandfather	33	48.5
	Grand father	15	22.1
	Father	12	17.6
	Self	8	11.8
	Total	68	100.0
Reason For Sharp Decline In Sheep And Goat Production	Urbanisation making access	10	11.2
	Poor research and extension	6	6.7
	Low productivity of existing breeds	13	14.6
	Drudgery and high labour requirement	5	5.6
	Incidence of pest and disease	7	7.9
	Lack of innovation	9	10.1
	Lack of interest	27	30.3
	High cost breeding stock	9	10.1
	Others	3	3.4
	Total	89	100.0
Management System	Subsistence	36	40.3
	Intensive	33	37.1
	Extensive	15	16.9
	Semi-intensive	5	5.6
	Total	89	100.0

respondents kept the animals as a business to augment family income, while 19.1% reported keeping the animals for subsistence purposes and out of passion. This report 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).

Table 3: Strategies for economic improvements of sheep and goat farming within the study area

Parameters	Class	Frequency	Percentage
Workable Solution To Revamp Sheep And Goat Production	Providing planted fodder bank	11	12.4
	Improvement in ruminant feed technology	19	21.3
	Govt. Providing land in per-urban centres	22	24.7
	Innovation in housing and feeding system	5	5.6
	Advancement of credit facilities	30	33.7
	Others	2	2.2
	Total	89	100.0
Total Annual Income From Agricultural Enterprise Per Year	< N 120,000	52	59.1
	N 121,000 - n 240,000	27	30.7
	N 241,000 - 360,000	2	2.3
	N 481,000 - n 1,000,000	6	6.8
	N 1,000,000	1	1.1
	Total	88	100.0
Technology Use To Enhance Sheep and Goat Production	Delivery of new research technologies	23	25.8
	Improvement in genetic potential	22	24.7
	Access to marketing information by linking farmers with consumers using cell phones	13	14.6
	Oestrus synchronisation	8	9.0
	Use of ready-made packaged feeeds	10	11.2
	Modified housing for urban and peri-urban producers	10	11.2
	Others	3	3.4
	Total	89	100.0

Table 4: Breeding and reproduction of sheep and goats within the study area

Parameters	Class	Frequency	Percentage
Breed Of Sheep and Goat Kept	West African dwarf	36	40.4
	Northern breeds	43	48.3
	Others	10	11.2
	Total	89	100.0
Type Breeding Practiced	Controlled breeding	38	42.7
	Uncontrolled breeding	46	51.7
	Other	5	5.6
	Total	89	100.0
Number Of Kidding/Lambing (Birth) Per Years	Once	20	22.4
	Twice	43	48.3
	Twice in three years	26	29.2
	Total	89	100.0
Number Of Offspring Per Litter	One	12	13.5
	Two	38	42.7
	Three	29	32.6
	Four	10	11.2
	Total	89	100.0
Major Disease Challenge	PPR	17	19.1
	Mange and ecto-parasites	29	32.6
	Worms and emaciation	39	43.8
	Others	4	4.5
	Total	89	100.0
Willingness To Pay For The Services	Yes	53	59.6
	No	36	40.4
	Total	89	100.0
Major Reason For Keeping The Farm Animals	For subsistence	17	19.1
	As a business	54	60.7
	Passion and interest	17	19.1
	Others	1	1.1
	Total	89	100.0

Conclusion

From the results of this study, it can be concluded that the major constraints of sheep and goat production in the study area were lack of interest and this could be attributed to the low productivity of existing breeds, low income derived from the enterprise relative to other farm enterprises and absence of technological innovations in feeding and management systems. In addition, lack of innovation in production system and high cost of breeding stock were also contributing factors. It was also inferred that most breed of sheep and goat in the study area were mainly the northern breeds. The preference for the Savanna breeds of goats might be influenced by its larger size relative to the indigenous breeds. The fact that older people are more directly involved in the small ruminant production system than the youths could be improved by the incorporation of new technologies that reduce drudgery. Appropriate measures should be ensured by the government to motivate the youths to participate in the activities of sheep and goat production. The use of pelletized forage feeds can reduce the problem of feeding if the technology is adopted.

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