

Assessment of Maternal Slaughter of Small Ruminants and its Economic Implications from Jigawa North-West Senatorial District, Nigeria

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Abstract:- The study was designed to assess the incidence rate of foetal wastage of small ruminants and its economic implication in the North-West senatorial zone of Jigawa State. It is obvious that animals of different breeds are slaughtered in various abattoirs. Six weekly markets selected purposely based on the high number of goats and sheep slaughtered weekly. The study was conducted for a period of six (6) months. The data collected includes a number of dry does, lactating does, pregnant does and buck; and number of dry ewes, lactating ewes, pregnant ewes and ram. The total of 240 questionnaires were distributed to farmers, livestock marketers, butchers, veterinarians and consumers for their opinions on why disposal and slaughter of pregnant animals. The data generated was analysed using descriptive statistics. The economic implication is estimated as the financial loss on the current value of sheep and goats. The results revealed that 5161 were sheep and goats slaughtered, comprising 4204 (81.5%) goats and 957 (18.5%) sheep respectively. The Sokoto-red breed of goats was the highest breed of goats slaughtered with 3765 (72.95%). From the total, 1105 (21.4%) and 315 (6.1%) were the pregnant does and ewes slaughtered respectively. The financial losses extrapolated as N 22, 100,000.00 and N 11, 025,000 for sheep and goats respectively. It was revealed that 26% of the respondents believed that slaughter of pregnant animals was due to sickness. Conclusively, pregnant sheep and goats were found slaughtered purposely for meat consumption. Therefore, farmers should be enlightened to avoid selling pregnant animals to curtail the incidence.

Keywords:- Foetal wastage, sheep, goats, abattoir, Jigawa, Nigeria.

I. INTRODUCTION

Agriculture is still considered as the largest sector that employs about 70% of the Nigerian population [1]. Nigeria has a population of 72.5 million goats, 41.3 million sheep and 19.5 million cattle [2]. The need for sufficient nutrients for human anatomical and physiological functions is utmost. Today, there is a considerable decrease in the quantity of proteins from the animal source in the diet of our teeming

population. This is because the livestock industry in Nigeria and most developing countries is challenged with numerous constraints such as feed scarcity, low productivity among some other indigenous breeds, farmer-pastoralist conflict, pests and diseases, poor veterinary services and inadequate processing facilities among others [3, 4]. In Nigeria, the proportion of livestock population is managed by pastoralists in the semi-arid zone with about 60% total population of the animals [5]. Again, [6] FAO, in 2014 projected that the need for animal products is expected to double or more in developing countries by the year 2030. Nevertheless, it was obvious that malnutrition due to inadequate protein from animal sources in some African countries is a detriment to our teeming populace due to setbacks in future livestock population [7, 8] and farmers-pastoralists conflict [9]. Slaughtering of pregnant livestock animals particularly sheep, goats and cows for meat is among the major challenges affecting the livestock sector [10]. Foetal wastage due to vicious slaughter of pregnant livestock is a practice used by humans against livestock production principles [11, 12, 13]. This habit of maternal slaughter of sheep and goats by man usually put down the breeders and nutritionist mission into catastrophe. Thus, it is among the limiting factors that frustrate the efficiency of sheep and goats production in Nigeria [14]. It could tend to widen the gap of animal protein requirements by young and adult people in the society [10]. However, some selected cases of foetal wastage were summarised and reported in Table 1.

This vicious slaughter of female pregnant livestock by man is a great setback to future livestock population viz a viz eliminating the desired traits for animal improvement. It is also a serious threat to the sheep and goats production sector with extreme negative impacts on the national economy. This study is aimed at assessing the incidence rate of slaughtering of a pregnant sheep and goats for meat in abattoirs in Jigawa North-West senatorial district in Nigeria.

Table 1: Previous Reports of Foetal Wastages in Different States in Nigeria.

Animal Species Affected	Location	State	Author
Cattle	Hadeja	Jigawa	[15]
Cattle	Makurdi	Benue	[16]
Cattle, sheep and goats	Nsukka	Enugu	[17]
Cattle, sheep and goats	Mubi	Adamawa	[14]
Cattle	Yola	Adamawa	[18]
Sheep and goats	Jalingo	Taraba	[19]
Cattle	Ogun	Ogun	[20]
Cattle and goats	Jos	Plateau	[21]
Cattle, camel, sheep and goats	BirninKebbi	Kebbi	[22]
Goats	Nsukka	Enugu	[10]
Cattle	Lafenwa	Ogun	[23]
Bovines	Bodija, Ibadan	Oyo	[24]
Cattle	Maiduguri	Maiduguri	[25]
Cattle	Lairage and Agege	Lagos	[26]
Camel	Sokoto	Sokoto	[12]
Cattle	Kano	Kano	[27]

II. MATERIALS AND METHODS

A. Study Area

This study was conducted at Jigawa North-West senatorial district of Nigeria. The zone comprises twelve local government areas under three (3) emirates. The local governments include Babura, Garki, Gagarawa, Gumel, Gwiwa, Kazaure, Maigatari, Ringim, Roni, Sule-tankarkar, Taura and Yankwashi. The area is among the large agricultural parts of the state and the inhabitants are mostly Hausa and Fulani. There is a large population of cattle, sheep and goats herders in the area [28].

B. Sampling Location

Two weekly markets were purposely selected from each emirate in the zone due to the magnitude of the small ruminant slaughtered for meat. The sampling locations are Gujungu, Babura, Gumel, Maigatari, Kazaure and Firji. All small ruminant animals of different ages observed at point of slaughter incorporated in this study. The study was conducted for a period of six (6) Months.

C. Data Collection

Data of slaughtered pregnant sheep and goats were collected from Gujungu, Babura, Gumel, Maigatari, Kazaure and Firji abattoirs and slaughter houses on market days. The data generated from this study includes number of

dry does, lactating does, pregnant does and buck; number of dry ewes, lactating ewes, pregnant ewes and ram slaughtered in each market day. However, 240 questionnaires were distributed to the farmers, livestock marketers, butchers, veterinarian and consumers for their opinions on why disposal and slaughter of pregnant animals. The foetuses observed from each animal after slaughter was used as an evidence for the confirmation of the pregnancy status of each female animal [11, 29, 30].

D. Statistical analysis

All the data generated from this study were analysed using descriptive statistics with aids of IBM SPSS software (version 25). The economic implication and losses due to maternal slaughter of pregnant sheep and goats was extrapolated each in a current monetary value of the average matured animal for the calculation of the expected loss.

III. RESULTS

From the findings of this study, it was revealed that 5161 animals comprising 4204 (81.5%) goats and 957 (18.5%) sheep were slaughtered. The Sokoto red breed of goats was the highest breed slaughtered with 3765 (72.95%) of the total number of the slaughtered animals in the zone while the Uda breed of sheep was the least animal slaughtered with only 35 (0.68%) as shown in Table 2.

Table 2: Breeds of Sheep and Goats Slaughtered within the Period of the study

Breed	Species		Total
	Goat	Sheep	
Balami	0	108	108 (2.09%)
Sahel	439	0	439 (8.51%)
Sokoto Red	3765	0	3765 (72.95%)
Uda	0	35	35 (0.68%)
Yankasa	0	814	814 (15.77%)
Total	4204 (81.5%)	957 (18.5%)	5161 (100%)

It was also shows that, from the total 186 (4.4%), 1310 (31.2%), 363 (8.6%), 418 (9.9%), 1726 (41.1%) and 201(4.8%) goats and 31 (3.2%), 370 (38.7%), 108 (11.3%), 143 (14.9%), 239 (25.0%) and 66 (6.9%) sheep were

recorded from Firji, Gujungu, Gumel, Kazaure, Maigatari and Ringim respectively as shown in Table 3.

From the findings of the study, Gujungu has the highest number of Balami sheep slaughtered 64 (59.3%) with least in Firji 0 (0.0%). Maigatari has the highest number of sahel goats 176 (40.1%) at slaughter point with least observed in Firji and Ringim with 7 (1.6%) each. Moreover, the highest slaughter of Sokoto red goats was recorded at Maigatari with 1550 (41.2%) with least observed at Firji 179 (4.8%). Again, Maigatari has the highest number

of Uda sheep slaughtered with 10 (28.6%) and the least was in Firji with only 1 (2.9%). It was revealed that also Gujungu has the highest number of Yankasa sheep 299 (36.7%) slaughtered with least recorded in Firji 30 (3.7%). Collectively, 217(4.2%), 1680 (32.6%), 471 (9.1%), 561 (10.9%), 1965 (38.1%) and 267 (5.2%) animals were slaughtered from Firji, Gujungu, Gumel, Kazaure, Maigatari and Ringim respectively as shown in Table 4.

Table 3: Total Number of Sheep and Goats Recorded from Various Locations within the Zone.

		Location						Total
		Firji	Gujungu	Gumel	Kazaure	Maigatari	Ringim	
Species	Goat	186	1310	363	418	1726	201	4204
		4.4%	31.2%	8.6%	9.9%	41.1%	4.8%	100.0%
	Sheep	31	370	108	143	239	66	957
		3.2%	38.7%	11.3%	14.9%	25.0%	6.9%	100.0%
Total		217	1680	471	561	1965	267	5161
		4.2%	32.6%	9.1%	10.9%	38.1%	5.2%	100.0%

Table 4: Total Number of Breeds of Sheep and Goats Recorded from Various Locations within the Zone.

		Location						Total
		Firji	Gujungu	Gumel	Kazaure	Maigatari	Ringim	
Breed	Balami sheep	0	64	11	6	25	2	108
		0.0%	59.3%	10.2%	5.6%	23.1%	1.9%	100.0%
	Sahel goats	7	171	22	56	176	7	439
		1.6%	39.0%	5.0%	12.8%	40.1%	1.6%	100.0%
	Sokoto Red goats	179	1139	341	362	1550	194	3765
		4.8%	30.3%	9.1%	9.6%	41.2%	5.2%	100.0%
	Uda sheep	1	7	2	8	10	7	35
		2.9%	20.0%	5.7%	22.9%	28.6%	20.0%	100.0%
	Yankasa sheep	30	299	95	129	204	57	814
		3.7%	36.7%	11.7%	15.8%	25.1%	7.0%	100.0%
Total		217	1680	471	561	1965	267	5161
		4.2%	32.6%	9.1%	10.9%	38.1%	5.2%	100.0%

Moreover, with regard to reproductive status of the animals slaughtered in the zone, it shows that from the total, buck has 1628 (31.5%), Dry does 684 (13.3), dry ewes 300 (5.8%), Lactating does 788 (15.3%), Lactating ewes 173 (3.4%) while Pregnant does and ewes have 1105 (21.4%) and 315 (6.1%) respectively. Ram has only 168 (3.3%) as shown in Table 5.

Moreover, it revealed that Gujungu and Maigatari have the highest number of female and male animals slaughtered with the least number observed in Firji, Kazaure and Ringim as shown in Figure 1.

However, for the reasons for the slaughter of pregnant animals, the results showed that 26% of the respondents believed that the incident usually happens due to sickness of the animal. Again, 20% believed that is due to lack of knowledge of the pregnancy, old age has 11% of the respondents with 9% each for malnutrition, dystocia and

bulkiness of the meat and only 7% recorded for reason due to accident as shown in Figure 2. Figure 3 shows fetuses removed from goats and sheep as observed in the abattoir. Figure 4A revealed the fetuses removed from goats at almost the last stage of their pregnancy, while 4B shows the fetuses removed from sheep due to unplanned slaughter due to sickness.

However, the economic implication is estimated as the financial losses extrapolated based on the current price of average matured sheep and goats in the market. As shown in the results, 1105 (21.4%) and 315 (6.1%) pregnant does and ewes were slaughtered respectively. Thirty-five (N 35,000) and twenty (N 20,000) thousand naira was estimated as average market values for sheep and goats respectively. Thus, extrapolated to 1105 x N 20,000 which is equal to N 22, 100,000.00 for goats and 315 x N 35,000 which is equal to N 11, 025,000 for sheep.

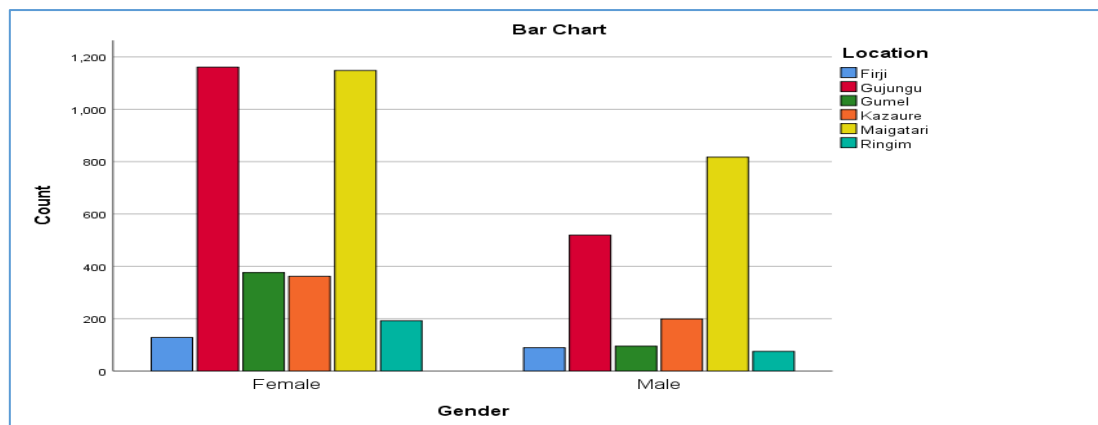


Fig. 1: Shows the results of female and male animals slaughtered within the study period.

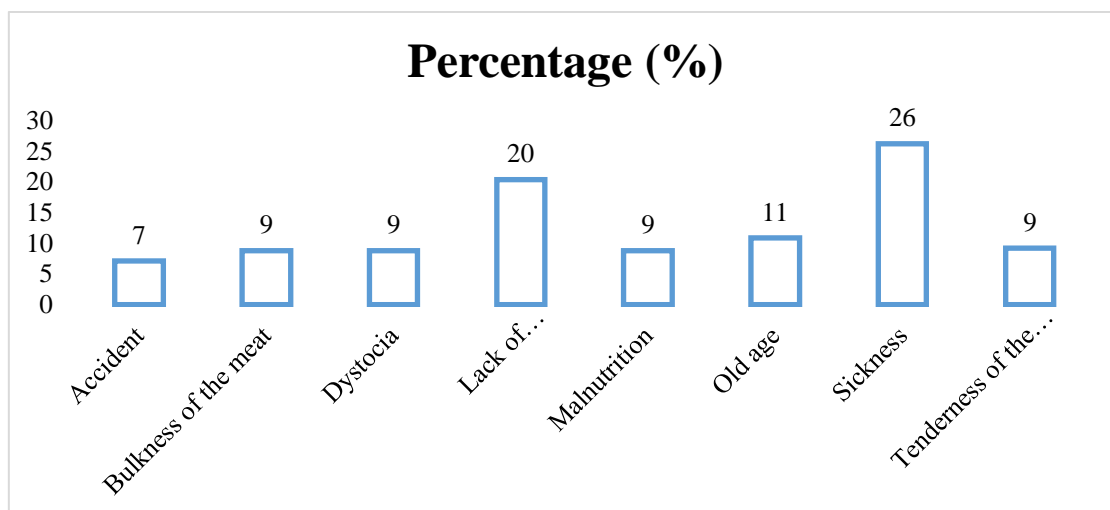


Fig. 2: Reasons for the slaughter of pregnant animals in percentage.

Table 5: Reproductive Status of Sheep and Goats in the Various Locations of the Study Area.

		Location						Total
		Firji	Gujungu	Gumel	Kazaure	Maigatari	Ringim	
Reproductive status	Buck	84	465	81	164	782	52	1628 (31.5 %)
	Dry Does	20	264	67	69	236	28	684 (13.3%)
	Dry Ewes	13	120	44	18	96	9	300 (5.8%)
	Lactating Does	47	155	120	76	315	75	788 (15.3%)
	Lactating Ewes	7	37	25	37	56	11	173 (3.4%)
	Pregnant Does	36	426	95	109	393	46	1105 (21.4%)
	Pregnant Ewes	5	159	25	53	52	21	315 (6.1%)
	Ram	5	54	14	35	35	25	168 (3.3%)
Total		217 (4.2%)	1680 (32.6%)	471 (9.1%)	561 (10.9%)	1965 (38.1%)	267 (5.2%)	5161 (100%)

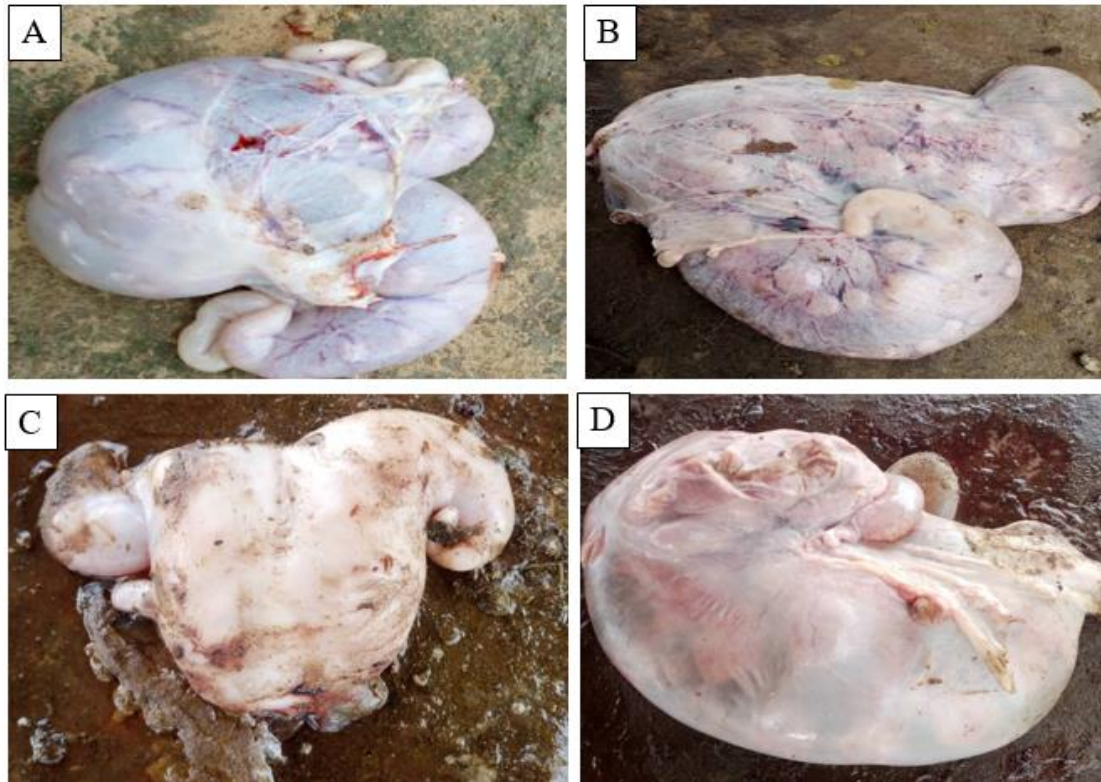


Fig. 3: A & B are foetuses removed from goats while C &D are the Foetuses removed from sheep as observed in the abattoirs



Fig. 4: A are the foetuses removed from goats at almost last stage of their pregnancy, while B are the foetus removed from sheep as a result of unplanned slaughter due to sickness.

IV. DISCUSSION

This study disclosed that 4204 goats (81.5%) are slaughtered more compared to sheep 957 (18.5%), this could be due to the prolific nature of goats as compared to sheep. Moreover, females were frequently slaughtered compared to male and this is in line with study by [19, 31]. Previously, in most of the developing countries, the low yield experienced in farm animals particularly in Sub-Saharan Africa is linked to the improper management, poor veterinary services, low quality traits of indigenous animals as well as diseases and pest infestation among others [32]. Additionally, foetal wastage was also considered as the prime causes of reduction in livestock population in Nigeria [16].

From the total, 1105 (21.4%) and 315 (6.1%) were does and ewes fetuses were wasted respectively. The findings are lower than that reported by [19] who reported 11.6% in goats and 24.1% in sheep. Similarly, this report is lower than that of [33] who reported 57% of foetal wastage in Gombe, Nigeria. [34] also revealed that 26.1% out of 0.21 million goats slaughtered annually were pregnant.

It was also revealed 9% of the respondent believed that pregnant animals have bulky meat, it was in agreement with findings by [31] who stated that pregnant animals are sold conceivably because of their heavier and good appearance. Moreover, [33] disclosed that about 34.3% of sheep that were brought to the point of slaughter in abattoirs were pregnant. Usually pregnant animals look robust; therefore, big sized animals could be very attractive to the butchers in order to suit consumer preference. The foetal wastage might be extremely high at the point of slaughter if the animals are not properly examined for the pregnancy [25]. Thus might also be attributed to decrease in animal production and consumption of low quality meat. However, the percentage differences observed among difference studies might be due to location, season and meat demand among peoples in the area.

The economic implication as translated into financial losses due to foetal wastage were N 22, 100,000.00 and N 11, 025,000 for sheep and goats respectively. This is sum up to N33, 125,000 in only six months and N 66, 250,000 annually, which is a great alarming and huge losses to the zone.

V. CONCLUSION

Conclusively, the study has disclosed that the foetal wastages linked to slaughter of small ruminants is common in the North-West senatorial district of Jigawa state, Nigeria. Thus, it is attributed to so many factors such as sickness, lack of knowledge about pregnancy, old age, malnutrition and accidents among others. Therefore, it was recommended that farmers should be enlightened to avoid selling pregnant animals. Proper ante mortem inspection should be educated to curtail the incidence. However, the government should also revisit the meat inspection act of 1968 that prohibits the slaughtering of pregnant animals for sustainable livestock production and maintaining the desired genetic properties of the animals.

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CONFLICT OF INTEREST

The authors declare no conflict of interest.

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