NUTRITIONAL AND ECONOMIC IMPLICATIONS OF INDUCED RUMINANT FOETAL WASTAGE IN HONG LOCAL GOVERNMENT AREA, ADAMAWA STATE, NIGERIA.

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Abstract

This study was carried out to determine the number and monetary values of foetal wastes as a result of incessant slaughtering of pregnant ruminant animals in Hong Local Government area, Adamawa State. Data were obtained from secondary sources. These sources were records kept by the slaughter slabs and abattoirs staff for three (3) years (2007-2009). Seasonal patterns of losses were also compared where the seasons were divided into late dry, early wet, late wet and early dry seasons. The number of foetuses recovered for each class of ruminant species was

Multiplied by a tentative market price of a yearling calf estimated at N10, 000.00, weaned lamb at N1, 000.00 and weaned kid at N 800.00. It was discovered that out of the 7,200 cattle, 34,000 sheep and 35,000 goats slaughtered yearly, 22%, 10.5%, and 9.7% of them respectively were pregnant. Seasonal pattern of foetal losses revealed that in the late dry season, 42% of foetuses in cattle, 7.7% in sheep and 9% in goats were lost. In early wet season, there were losses of 39%, 8.06% and 6% losses for cattle, sheep and goats respectively. In the late wet season, there were losses of 12% for cattle, 12% for sheep and 8% for goats respectively. Early dry season witnessed 35% losses for cattle, 10% for sheep and 10% for goats. Estimated losses in monetary values as a result of the induced foetal wastes in the study period were N42, 060,000.00 for cattle, N10, 705,000.00 for sheep and N8, 332,400.00 for goats. It is concluded that this livestock mismanagement seriously slows down the rate of the social and economic development of Livestock farmers in the area. Previous edicts on this matter should be strictly enforced. Farmers should be taught techniques of pregnancy detection and economic implications of the losses.

Key Words: Economic implication, Induced foetal wastes, Ruminants, monetary values, tentative market prices.

INTRODUCTION

The estimated national ruminants population consists of 13.9 million cattle (FAO, 1990), 34.5 million goats and 22.1 million sheep (Wosu, 2002) making a total of 70.5 million ruminants. It is estimated that Adamawa State has 3.5 million cattle, 3.0 million goats and 2.5 million sheep (Tukur and Ardo, 1999), making a total of 9 million ruminant animals.

The importance of ruminants and their contribution to human welfare and improvement of Agriculture is well recognized (Wilson, 1996). They contribute about 25% of the Agricultural gross domestic product in sub-Saharan Africa. It exceeds this value in some West African countries such as Nigeria (ILCA, 1993). Thomas (2007) defined foetus as the animal embryo formed from the age of 45 days to the time just before birth.

Rampant foetal wastages do occur in ruminants as a result of nutritional stress, diseases, infertility of breeding stock and slaughtering of pregnant animals. Wilson, (1996) reported that reproductive wastage due to infertility, embryonic mortality, prenatal and postnatal losses, and morbidity seriously limit ruminants production in sub-Saharan Africa.

The increases in human population especially in developing countries

continue to put a lot of demand on animal protein supplies (FAO/ WHO, 2003). The economic recession witnessed in Nigeria since the 1980s brought in the wake of slaughtering of not only prime breeding males but also pregnant animals, thus adding to foetal wastage and economic losses.

It has been reported by Alabi (1998) that animal protein shortage in our people's diets are partly caused by induced artificial foetal wastage caused by slaughtering of pregnant animals in our local slaughter slabs and abattoirs. Wilson (1996) had earlier reported that though animals slaughtered for meat may be those in old age range which have outlived their useful productive lives, a high percentage of those slaughtered are pregnant animals. This suggests that the animals are still in their useful productive lives. The percentage is estimated to be in the neighborhood of 34.05% which is considered as enough to be of great concern (ILCA, 1998).

Although Abiola (1996), Matthew (1992) and Wekle (1992) attributed foetal wastage to poor pasture availability, Oyekunle (2002) stated that 12.5-63.6% have been due to slaughtering of pregnant animals. The social and financial implications of these losses are enormous. The estimated economic loss due to foetal wastage at Mubi abattoir alone was in the neighborhood of 1.4million (Halle *et al, 1997*).

Information on the status of animals being sent for slaughter in Nigeria is usually scarce (Tambi, 1992). This also applies to Hong Local government area of Adamawa State. This is because, 80% of the national ruminant populations are traditionally reared by the nomads. Here, sound economic livestock management which demands that animals slaughtered must be mainly bulls and the reproductively inactive females are virtually absent.

This study was therefore carried out to evaluate the percentages of pregnant ruminants slaughtered in abattoirs and slaughtering slabs from the total number of animals slaughtered within a specific period in the study area, the seasonal trend in the slaughtering of the animals and the estimated monetary values of the foetal wastages. This could help in creating awareness of the causes and economic implications. This in turn, might move those in authority to institute corrective measures to stop or reduce the depletion of our livestock resources. However, this study is mainly concerned with foetal wastages resulting from slaughtering of pregnant animals.

MATERIALS AND METHODS

Study Area

The study area covered the entire Hong Local Government Area of Adamawa State. It lies between Latitude 90^0N and Longitude 12^017^1 East of the Greenwich Meridian. Covering a land area of 4,463.84Km^2, it has population of 2, 677 people according to 2006 National Census (Adamawa State Diary, 2009).

It shares a common boundary with Gombi Local Government Area in the West, Borno State in the North, Mubi North and Mubi South Local Government Areas in the East with Song and Maiha in the South. With a tropical type of climate, it lies in the Sudan Savanna zone. It has two distinct seasons which are rainy and dry seasons. The rainy season starts in May and ends in October. The dry season commences in October and ends in May. The area has an average rainfall of 910.5mm annually with an average temperature of 27.8^0C (Adebayo and Tukur, 1999).

Data collection

Data for this work were obtained from secondary sources. These sources were records from the daily, monthly and yearly slaughter of animals for meat kept by the personnel's of the slaughter slabs and abattoirs. The records used covered the period of three years (2007-2009). Seasonal trend pattern in the number of foetuses recovered were also obtained and

compared. The seasons were divided into early wet season, late wet season, early dry season and late dry season.

Each of the slaughter slabs or abattoirs had the slaughteringing capacity of 50 heads of cattle and 100 heads of small ruminants per day. Records were obtained for each of the species of ruminants: cattle, sheep and goats. Results obtained were compared using totals and percentages. Yearly number of foetuses recovered for each class of ruminants was multiplied by a tentative market price of a yearling calf estimated at N10, 000.00, weaned lamb at N1,000.00 and weaned kid at N800.00.

RESULTS AND DISCUSSIONS

Table 1, shows the average number of species of ruminants slaughtered and their foetal losses in these years. Cattle had the highest (22%) of yearly foetal loss (22) due to slaughtering of pregnant animals compared to those of small ruminants: Sheep (10.6 %) and Goats (9.7%) either on monthly or yearly basis. Ibrahim (2010) reported that embryonic and foetal losses do occur due to slaughter of pregnant ruminant animals. That failure to diagnose early pregnancy can partly explain this behavior. However, in times of crisis, farmers deliberately sell pregnant animals to fund court cases. The 22% foetal loss for cattle due to slaughtering of pregnant animals and 10.6% for small ruminants is in the lower limit of the range (20-70%) reported for sub-Saharan Africa (Ibrahim, 2010).

He further stated that although some farmers may be reluctant to sell their pregnant animals, those that conceive without farmers knowing them are often sold. In some sub-Saharan African countries like Nigeria, out of the 70% pregnant animals sold out for slaughter, 24% are with twins, while this is so, a high percentage of them are in their 3^{rd}-5^{th} months of gestation. That if these animals were not slaughtered, their fertility rate would be 73.2%, fecundity 125.1% and twinning rate 25.1% (Ibrahim, 2010). These situations entail that induced foetal wastages place a serious constraint on the development of ruminants industries in Nigeria. This is avoidable since it is economically feasible to determine pregnancy in heifers, cows, Ewes and Does prior to their anticipated times of calving, parturition (Thomas, 2007). This helps in evaluating animals to detect non-pregnant ones to be

TABLE 1: MEAN NUMBER OF RUMINANTS SLAUGHTERED BY SPECIES AND FOETAL LOSSES IN THREE YEARS (2007-2009)

Species	Periods of Slaughter: Daily			Monthly			Yearly		
	Slaughters	Losses	% loss	Slaughter	Losses	% Loss	Slaughter	Losses	% Losses
Cattle	50	10	**20**	1,500	340	**23**	7,200	1,600	**22**
Sheep	100	25	**25**	3,100	300	**9.7**	34,000	3,600	**10.6**
Goats	100	25	**25**	3,050	320	**10.5**	35,000	3,400	**9.7**

marketed for slaughter instead of rampant selling and slaughtering of the pregnant animals. Mugerwa (2009) reported that about 66million sheep and 55 million goats are slaughtered annually for meat in sub-Saharan Africa.

The findings showed that there are about 8,600 yearly ruminants' foetal wastages in this study area. This therefore causes a serious check on the stock build ups. This has earlier been reported by Thomas (2007) that a live calf, lamb or kid born and weaned from each breeding female each year is the primary objective for successful ruminants' reproduction. That calf, lamb or kid losses are typically the second most important reasons for low percent calf, lamb or kid crop in a herd.

TABLE 2: THREE YEARS'DATA OF COWS SLAUGHTERED, FOETAL WASTAGE AND LOSS IN MONETRY VALUES

YEAR	NUMBER SLAUGHTERED	NO. FOETAL WASTAGE	% WASTAGE	EST MONETARY VALUE
2007	7,200	1,600	22	16,000,000.00
2008	6,720	1,204	18	12,040,000.00
2009	5,160	1402	27	14,020,000.00
TOTALS	19,080	4,206	22	42,060,000.oo

Slaughter data of cows for three years (2007-2009) is shown in table 2. Results show that an average of 1,400 foetuses is lost every year due to slaughtering of pregnant animals. These foetuses would have been 1, 400 calves had they been successfully calved and weaned. An estimate of 14,000,000 Naira in monetary value had therefore been lost due to induced foetal loss of these animals. This represents an average of 22% of the total number of cattle slaughtered each year.

TABLE 3: THREE YEARS' OF SHEEP SLAUGHTERED, FOETAL WASTAGE AND ESTIMATED LOSS IN MONETARY VALUES.

Year	Number Slaughtered	Foetal Wastage	% Foetal wastage	Estimated monetary value
2007	34,000	3,600	10.6	3,600,000.00
2008	35,070	3,585	10.2	3,585,000.00
2009	33,880	3,520	10.4	3,520,000.00
TOTALS	102,950	10,705	10.4	10,705,000.00

Table 3 shows the number of sheep slaughtered, number of pregnant ewes slaughtered, foetal losses and estimated yearly losses in monetary values. An average of 34,316 sheep is slaughtered each year in the study area. Out of this, 3,568 were pregnant ewes. Consequently, 3,568 foetuses were lost amounting to N3, 568,333 estimated losses in monetary value.

TABLE 4: THREE YEARS' OF GOATS' SLAUGHTER, FOETAL WASTAGE AND ESTIMATED LOSS IN MONETARY VALUES.

Year	Number Slaughtered	Foetal wastage	% Foetal wastage	Estimated Monetary values
2007	35,000	3,400	9.7	2,720,000.00
2008	36,170	3,780	10.5	3,024,000.00
2009	33,962	3,223	9.5	2,578,400.00
TOTALS	105,132	10,403	9.9	8,322,400.00

In Table 4, it is revealed that an average of 35,044 goats is slaughtered each year in the study area out of which, 3,468 were pregnant does representing 9.9% of lost foetuses. This represents an estimated N2, 774,133 losses in monetary value. In a similar report, Idahor (2010) stated that about 78 calves, 49 lambs and 65 kids are lost due to slaughter of pregnant animals on daily basis in only two abattoirs in Lafia, Nassarawa State. This is equivalent to 14,235, 8,843 and 11,863 yearly losses for calves, lambs and kids respectively.

Table 5 depicts the seasonal trends in the induced ruminant foetal wastage in the study area. Cattle are found to be worst hit by this abuse of animal welfare in all seasons. The highest number of pregnant cows slaughtered occurs in late dry season followed by early wet season. These periods correspond to periods of adverse shortage of feed in which animals become too poor in condition: at this point, a

stockman can hardly differentiate between pregnant and non-pregnant cows.

Those of small ruminants are mostly affected in the late wet and early dry seasons. These periods correspond with the times children return to School and periods of festivities when large numbers of these animals are indiscriminately sold out to solve these domestic problems.

TABLE 5: INFLUENCE OF SEASON ON RUMINANT ANIMALS SLAUGHTERED AND FOETAL WASTAGE

SEASON	NUMBER SLAUGHTERED			NUMBER SLAUGHTERED PREGNANT			% FOETAL WASTAGE		
	Cattle	Sheep	Goats	Cattle	Sheep	Goats	Cattle	Sheep	Goats
Late dry Season	1,070	10,010	7,030	451	772	656	42	7.7	9
Early wet season	1,105	9,260	8,185	433	741	447	39	8.0	6
Late wet season	2,040	5,510	6,294	245	656	773	12	12	8
Early dry season	1,452	9,498	9,510	502	965	905	35	10	10
Totals for a year	5,667	34,278	31,019	1,631	3,134	2,781	Mean % 32	9	8

NB:
Early dry season (November/December)
Late dry season (March/April)
Early wet season (May/June)
Late wet season (September)

Conclusion

The consequences of these foetal wastages will lead to fatal malnutrition. To meet the animal protein requirement of Africa by the year 2025, the rate of ruminant production must increase by 4% (Mugerwa, 2009). However, the most rapid ruminant production growth rate is estimated to be 2.2% in the sub-humid and semi-arid ecozones with 1.0% in the highlands (Ibrahim, 2010). These rates of increase are far below the rate required to meet the animal protein requirement.

The findings of this study showed that 5,667(32%) cattle, 34,278(9%) sheep and 31,019(8%) goats are slaughtered annually. Since the rates of wastages are, double the rate of increase in small ruminants and almost ten times in large ruminants, the meeting of this 2025 target is a mirage.

Recommendations

Based on the magnitudes of the values of foetal wastages revealed in this study, it can be concluded that sound livestock and abattoir management which demands that ruminants sold for slaughter should be males or reproductively inactive females is not usually adhered to. It is therefore recommended that to avoid these wastages, management techniques should be developed to reduce this wastage. Previous edicts on killing and slaughtering of animals should be strictly enforced. Slaughter slabs and abattoir staff should be made to properly carry out ante mortem inspection of animals to be slaughtered so as to avoid slaughtering of diseased and pregnant animals. Farmers should also be taught simple but efficient techniques of pregnancy detection in ruminant animals and the economic implications of slaughtering them.

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