



(RESEARCH ARTICLE)



System and practical of breeding, caprine in the Abéché city in Chad

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Abstract

The objective of this study is to know the system and the practice of breeding of caprine in the Abéché city. The study was undertaken by investigation in the town of Abéché for two months (June and July 2021), near 50 households. The collected data carried on the characteristics of the households (sex, matrimonial situation and the level of study of surveyed), principal activities of surveyed, mode of acquisition and objectives of breeding, the systems and techniques of breeding. The results show that the breeding of caprine is practiced mainly by the men and who have an age ranging between 30 and 45 years. The majority of the stockbreeders acquired their animals by purchase, and the sale of the animals which constitutes the principal form of exploitation of caprine in the zone of study. The divagation is the principal fashion of control of the animals. In conclusion with Abéché the stockbreeders practiced the system of extensive breeding, without control of the animals, and particular follow-up, and exploit the natural pastures. The control of these systems is very necessary for a good behavior of breeding.

Keywords: System; Breeding; Caprine; Abèche; Chad

1. Introduction

In Chad, one estimates that the breeding accounts for 37% of the full value of the agricultural production, that is to say 14 to 20% of the gross domestic product. The breeding also contributes to the trade balance, since the cattle on foot represents in value, except oil, the first station of exports, right before cotton [1]. The breeding in addition mobilizes 40% of the active population and fact food more than 70% of the rural population, getting to them a source of revenue [1]. Lastly, the breeding in Chad, in addition to being an important sector of the nation's economy, is anchored in the culture and the traditions of many rural populations [2]. The Chadian livestock is especially made up of bovines, sheep, caprine and camélidés for a manpower of 93.803.192 heads according to the general census of the cattle [3]. The small ruminants are estimated at more than 56 million heads (26 436.170 sheep and 30.519.349 caprine). The population lives to 85% of the agro-pastoral activities [4]. The pastoral systems, largely dependant on the natural resources, govern this, sector with approximately 80%. In the current context where poverty touches full whip the great majority of the populations, the small ruminants, departure their low costs and the facility of their maintenance, have a role growing to play in the zones where the availability in fodder is precarious [5 - 6]. The rural sector occupies a very important place in the nation's economy insofar as this sector contributes to a significant degree to food safety and the socio-economic

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development of an important fringe of the rural population. This capital part which the breeding in the nation's economy plays, is explained by several factors in particular: Importance of the manpower of the livestock; The availability devastates ground surface of course; The know-how acquired by the pastoral communities; Competences and the support of the official authorities. According to a study of the platform of support to the actors of the pastoralism in Chad realized in 2016 bearing on the inventory of fixtures of the development pastoral, the breeding contributed to a total value of 14% with the formation from the national GDP and 53% with that of the rural sector. It has gets 30% of total revenue of export except oil. The sector of the breeding occupies 40% of the rural population, that is to say approximately 3,5 million anybody which belong, mainly, with the most vulnerable layer of the rural world. The annual flow of incomes related to the breeding is regards has 140 billion FCFA [7]. The small ruminants and more particularly the caprine ones are the highest animal species in zones tropical and sahélienne. Lastly, the livestock productions play a part in food safety thanks to the protein contributions coming from milk, eggs and the meat [8]. Demographic strong growth of the population and fast urbanization of the town of Abéché to involve a protein strong demand of animal origin. It proves to be necessary to know the systems of the breeding in the zone of study and their performances zoo technical (production and reproduction) of caprine, for a good control of the systems of breeding in order to define the practices and the techniques adapted of breeding caprine to Abéché.

2. Material and methods

2.1. Zone of study

The study was to realize in the town of Abéché, located at the East of Chad; Abéché is the capital of the area of Ouaddaï. It extends between the 13° 48' 584" from Northern latitude and the 20° 50 ' 139" of longitude Is. The zone of study is under the influence of the intertropical climate with one dry season 9 months and a rainy season 3 months. The mode of these two seasons is defined by the fluctuations between the masses of dry air of North (the harmattan) and the masses of maritime humid air of South-west (monsoon). Pluviometry annual average is approximately 300 mm the temperature of the area is variable according to the periods.

2.2. Sampling and method of data acquisitions

The study related to a herd of 877 caprine, including 114 males and 763 females, in 50 households. The distribution of the animals according to sex is described in (Table 1)

Table 1 The distribution of the animals according to sex

Sex	Effective	Percentage %
Male	114	13
Female	763	87
Total (NR)	877	100

The investigations were carried out with cards readjusted following an pre-investigation carried out beforehand. The languages used for the administration of the questionnaires were the Arab language (language room). The investigation is of type semi-structured with cards of questionnaire filled out by the investigator. It consists in posing series of questionnaires closed and opened on the card of identical and individual investigations relating to several parameters. On the whole 50 stockbreeders the caprine ones were surveyed. The investigation was carried out for two months (June and July). A questionnaire semi-structured was used as guide of maintenance. The principal points approached at the time of the investigation were: characteristics of the households (sex, matrimonial situation and the level of study of surveyed), principal activities of surveyed, mode of acquisition and objectives of breeding, parameters of reproductions of the caprine ones.

2.3. Statistical analyzes

The collected data were seized on the Excel spreadsheet. Software XLSTAT (version 2018.) was used for the statistical analyzes. The measured variables were the ponderal parameters (weight birth and adult weight), and the parameters of reproduction (age to the first setting in reproduction, interval between settings...). The descriptive analysis made it possible to calculate the parameters of dispersion (average, standard deviations, minima and maxima). The variance analysis between the average ones was made using the test of Mann-Whitney for the comparison of two averages to the threshold of 5%.

3. Results

3.1. Characteristics of the households

The characteristics of households (sex, matrimonial situation and the level of study of surveyed) are described in table 2

Table 2 Profiles of the stockbreeders with Abéché in Chad

Parameters	Method	Manpower	%
Sex	Male	33	60
	Female	17	34
Matrimonial situation	Married	26	52
	Single person	14	28
	Widow	6	12
	Divorced	4	8
Level of study	Primary	14	28
	Secondary	8	16
	School Koranic	22	44
	Superior	6	12

The breeding of caprine in Abéché is practiced mainly by the men and minoritairement by the women ($p < 0,05$). The majority of our surveyed were married and a small percentage of those constituted the whole of the single people, the widows and of divorced ($p < 0,05$). The highest proportion of the stockbreeders has the Koranic level of study followed of those which have the primary education level, the proportion of those which have a level of secondary study and superior was weakest ($p < 0,05$).

3.2. Principal activity of the stockbreeders

The stockbreeders of caprine in Abéché practice several activities (Figure 1).

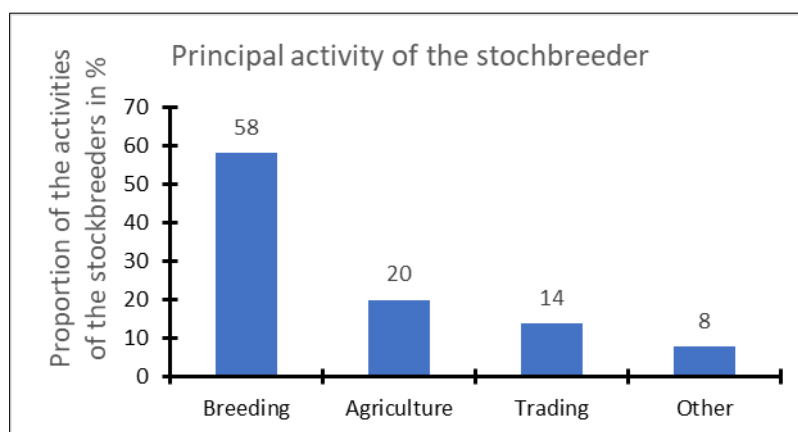


Figure 1 Distribution of the stockbreeders of caprine according to the activities

More half of the stockbreeders of caprine in Abéché practice the breeding and the remaining part respectively practice agriculture, the trade and other activities ($p < 0,05$).

Experiment and training of the stockbreeders of caprine in Abéché

Table 3 Set out again of the stockbreeders according to their experiment

parameters and characteristics	Effective	Frequency (%)
Experiments in breeding		
0-5 years	12	24
5-10 years	28	56
10 years and more	10	20
Training in breeding		
Formed	8	16
Not Formed	42	84

The majority of the stockbreeders the caprine ones in Abéché have experience ranging between 5-10 years and the part remaining is experience whose age lies between 0-5 years and 10 years old and more respectively. Concerning the formation in the field of breeding more half of the stockbreeders not formed with a rate of 84%

3.3. Distribution of surveyed according to the age

The distribution of the stockbreeders according to their age bracket is represented by figure 2

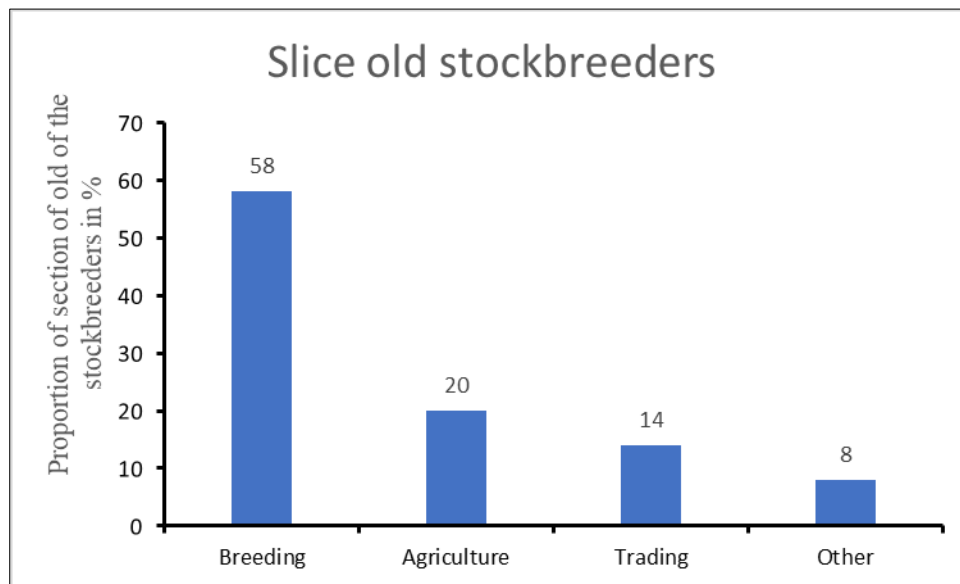


Figure 2 Distribution of the stockbreeders according to their age bracket

The stockbreeders having the age ranging between 30 and 45 years were the most follow-ups of those whose age and more de45 years and those which have the age than 30 less years were fewer.

3.4. Mode of acquisition of the Caprine ones

The distribution of the stockbreeders according to mode of acquisition of caprine is represented by figure 3.

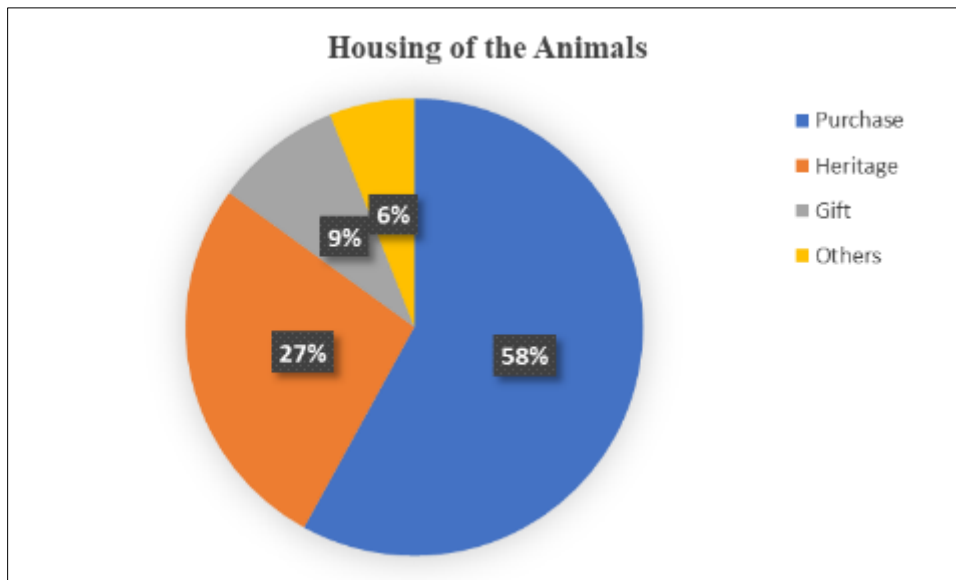


Figure 3 Distribution of the stockbreeders according to mode of acquisition of the caprine ones

More half of the stockbreeders acquired their caprine by purchase and the remaining part, acquired to them his by heritage, gift and others ($p < 0,05$).

3.5. Objectives of the breeding of caprine in Abéché

The distribution of the stockbreeders according to their objectives in breedings is represented by figure 4.

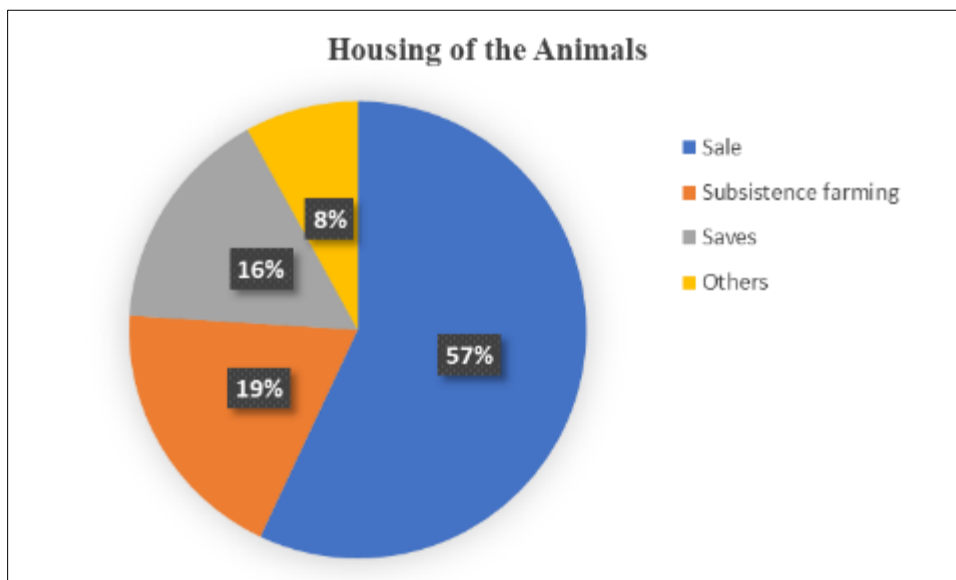


Figure 4 Distributions of the stockbreeders according to their objectives in breedings

More half of the stockbreeders of the sheep raise their sheep for the sale. The sale of the animals which constitutes the principal form of exploitation of caprine the follow-up of subsistence farming. The remaining part, which raises their caprine for their saving and others ($p < 0,05$).

3.6. Systems and Technique of breeding of the caprine ones

Control of caprine in the zone of study.

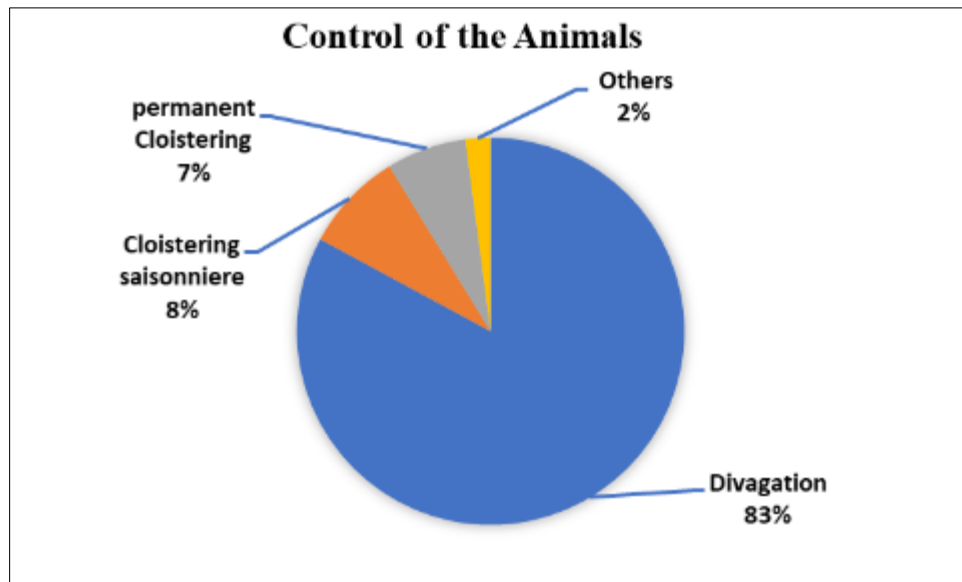


Figure 5 Control of the animals in the zone of study



Figure 6 Photo Goat's milk cheese in divagation

3.7. Housing of Caprine with Abéché

The distribution of the stockbreeders according to housing of their animals is represented by the figure.

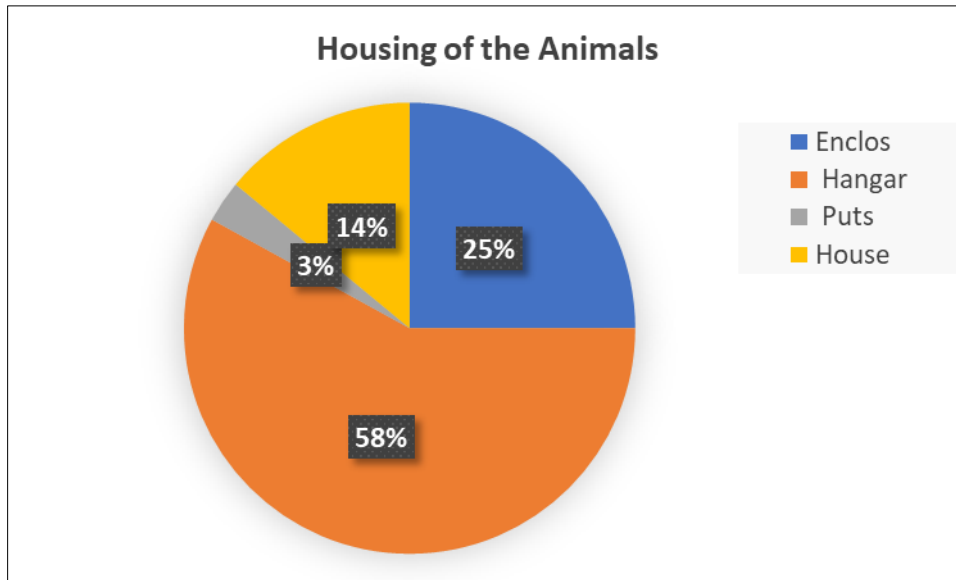


Figure 7 Distribution of the stockbreeders according to residences of their animals

The majority of the stockbreeders of caprine use the Hangars like housing of their animals, and the remaining part use the enclosure respectively, puts and house like housing of the animals.

3.8. Properties of the livestock building

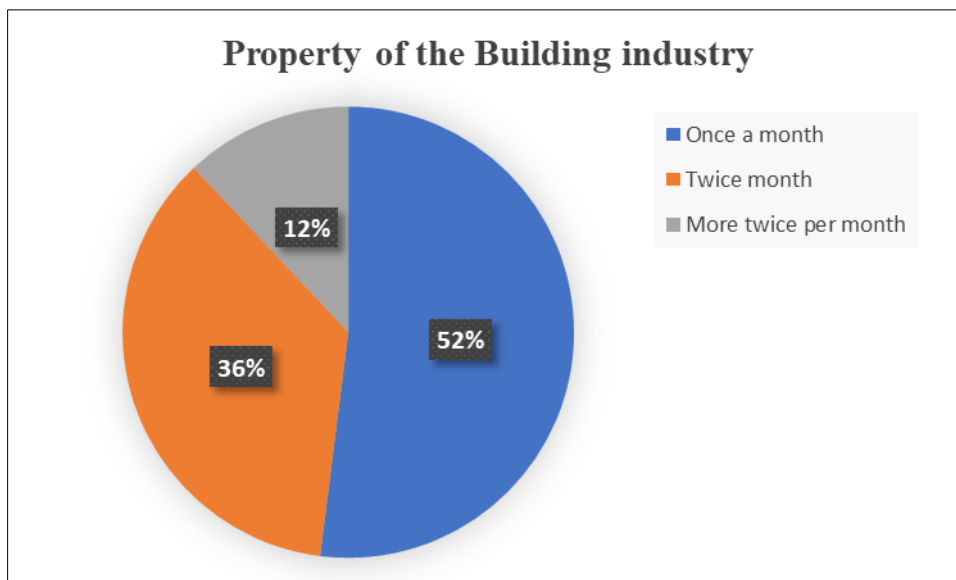


Figure 8 Distribution of the stockbreeders according to the frequencies of cleaning per annum

4. Discussion

4.1. Characteristics of the stockbreeders

The breeding of caprine in Abéché is practiced more by the men (60%) compared to of the women (34%). The higher proportion of the men in this breeding is due to the fact the men are in general are the persons in charge of the family. This proportion higher of the men in this activity with Abéché lower than 96,5% was reported to Cameroun [9]. Most of the stockbreeders of the sheep (52%) are married. The great proportion of married among inquired translated the level of social importance of the breeding. These results slightly lower than 85,5% of grooms are reported to Cameroun [10] and with those brought back by Abéché in Chad by [11] The majority of surveyed have a level of study Koranic (44%) and followed those which have a primary level of study (28%). What amply justifies the high rate of the

descolarisation and illiteracy in stockbreeder medium in the zone of study. These results are different with those reported to Niger and Burkina [12 - 13]

4.2. Principal activity of the stockbreeders

The majority of the stockbreeders of caprine in the zone of study (58%) has as an main activity the breeding followed of those which make agriculture (20%). These results are different from those reported to Niger which indicates that the majority of the stockbreeders of caprine have as principal activities agriculture [14]

4.3. Experiment and training of the stockbreeders in the zone of Study

It comes out from this study that more half of the stockbreeders surveyed in the town of Abéché have experience in this activity with a rate of 56% and one age ranging between 5 - 10 years followed of 24% which have an age ranging between 0 - 5 years and finally 20% of the stockbreeders who have an age more than 10 years in this activity. These results are different with that obtained by [10] in 2016 in the extreme North from Cameroun which affirms that the more stockbreeders have experience in 21 years breeding and more and those obtained by [15] in Oum-Hadjer that the rate of the stockbreeders whose age lies between 5-10 years is of 48,66%. These results can have explained by the fact that the majority of the stockbreeders are young people and seek to invest there or saved

4.4. Set out again of the stockbreeders according to the Old one

The age bracket of stockbreeders of Caprine highest is that ranging between 30 - 45 years (52%) followed age bracket ranging between 45-60 years (26%). This shows that the breeding of the Caprins sheep in Abéché is an activity where the people of any age start there to invest or save. The same observations were reported by [16]. These results are different from those of [17] in the department of Mvila, area of the South Cameroun which had obtained 43,9% for the age bracket ranging between 41-60 years.

4.5. Mode of Acquisition of the caprine ones

The modes of acquisitions of Caprine in the zone of Study are acquired various modes: purchase, heritage, gift and others. The principal mode of acquisition was the direct purchase of Caprine at the market 58% and followed heritage 27% and gift 9% and the other forms of acquisition account for 6%. These results are similar to those obtained in the extreme North of Cameroun by [10] where the purchase represented the principal mode of acquisition of the animals. This proportion was different from that reported to Niamey (Niger) which indicates that 78,8% of the stockbreeders of the Peulh sheep acquire their animals by heritage [18]. These results seem to find their justification in the fact that the zone of study belongs to the area of the country which holds a great number of small ruminants and thus the breeding is a passion and a lifestyle for the population of the zone.

4.6. Objective of the breeding of Caprine in Abéché

The objectives of breeding of Caprine in the zone of study are numerous: sales (returned) subsistence farming (sacrifices, festivals, baptism, etc) the main aim of the breeding the Caprine ones is the sale (57%). What allows the stockbreeders of supplied in products of first need, to pay the veterinary and zootechnical inputs (purchase of the veterinary, fresh products of vaccination, food complement). This high rate of the commercial objective of Caprine justifies a strong demand of caprine in the commercial medium in the zone of study. What returns it its meat plus appraisal that the other animals These results corroborate those obtained in Cameroun whose main objective of the breeding of the small ruminants is the sale [13]. Whereas other authors of the country pay the main aim of the breeding of the small ruminants is subsistence farming [19].

4.7. System and technique of breeding of Caprine in Abéché

4.7.1. Control of caprine in the zone of study

The permanent divagation is the principal mode of control of the herd, because it is met at the majority of the stockbreeders surveyed in the zone of study (83,3%) followed seasonal cloistering (8,4%) the same tendency had been observed already by [10] in Cameroun the 2016 divagation is the principal fashion of control of the herd (72,1%) and [20] in the valley of Ntem in South-Cameroun and in Lomié in Be-Cameroun, where [21] had found that 64% of the stockbreeders practiced the system of extensive breeding. The animals without control, and particular follow-up exploit the natural pastures with length of days.

4.7.2. Housing of Caprine in Abéché

There exists for this purpose several types of housing. Our observations show that the major part of the stockbreeders shelter their animals in Hangars (58%), followed those which place them in the enclosures (25%). These results are different has those obtained by [10] in the Extreme North of Cameroun that the major part of the stockbreeders shelter their animals in boxes (88,5%) and with those carried out in Mayo Danay where a very strong proportion of the stockbreeders shelter their animals in boxes followed of those which place them under the hangars, the enclosures and with the stakes [9] and to the observations which were made by [19] in Be-Cameroun with 77,1%, by [20] with Lomié with 88% and [17] in Mvila with (92,8%) stockbreeders who affirmed not to place their animals. In Batschenga in Center-Cameroun, [22] also observes that housing is non-existent.

4.7.3. Properties of the livestock buildings

The property of the livestock building would be made in a way either usual or or with an aim of maintaining the room clean. In the studied zone, 52% of the stockbreeders regularly carry out (once a month) the meetings of cleaning in the building of the animals while 36% twice do it per month. Because, the dejections of the animals could be used as manure to fertilize the fields. These results are different as of those [10] that the stockbreeders clean more twice per month 47%.

5. Conclusion

The part which plays the caprine ones in the town of Abéché us led to undertake this study in optics to better know the systems and the practice of breeding of the caprine ones. Thus, the study made it possible to know, the characteristics of the households (sex, matrimonial situation and the level of study of surveyed), principal activities of surveyed, mode of acquisition and objectives of breeding, the conduits of breeding of the caprine ones. The results of the study showed that the breeding is practiced mainly by married men, having like another activity the trade, agriculture. The principal mode of acquisition of the animals was the direct purchase from caprine the 58%, with as objective of the breeding is the sale 57%. The permanent divagation which constitutes the principal mode of control of the herd 83.3%. The majority of the stockbreeders shelter their animals in Hangars 58%.

Compliance with ethical standards

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Disclosure of conflict of interest

No conflict of interest.

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