CATTLE OWNERSHIP STATUS, SIZE, AND MANAGEMENT SYSTEMS IN LAFIA LOCAL GOVERNMENT AREA OF NASARAWA STATE, NIGERIA.

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ABSTRACT

Herd ownership status, size and management systems of herds of cattle within Lafia Local government area of Nasarawa state were examined in a survey carried out between year 2000 and 2001 using structured questionnaire. 200 questionnaires were used for this study. Respondents were randomly selected to cover the study area. Notable places covered by the survey are: Fulani settlements, cattle markets, grazing sites and small holders within the study area. Special attention was however focused on the Biological control of tsetse fly project BICOT field area covering approximately 1, 500km^2 within Lafia Local Government area. 185 of the 200 questionnaires administered were returned. The results showed that 131 (70.81%) of the respondents are cattle owners, 39(21.1%) are either their children or those that usually assist the cattle owners while 15 (8.1%) keep cattle for owners based on commission. Herds within the study area are of various sizes, 33% have less than 20 cattle, 20.5% have between 21-30, 15.7% have between 31-40, 17.3% have 41 and above while others 13.5% did not respond. The management systems used by cattle owners in the area include total confinement, night confinement with or without tattering, semi-nomadism and transhumance. The main source of drinking water for the cattle is the stream where 165 (89.2%) of their respondents get water for their cattle. 152 (82.2%) of the respondents are aware of disease(s) or conditions that usually have bad effect on their cattle with 148 (80%) being familiar with tsetse fly and trypanosomosis. 153 (83%) of the respondents usually treat their animals against trypanosomosis. Constraints to increased cattle and other livestock production include; diseases, lack of adequate veterinary services, existence of fake drugs and fake veterinary practitioners, among others.

Keywords: Ownership status, herd size, management systems, cattle.

INTRODUCTION

Animal agriculture is an indispensable pre-requisite towards the sustainability of human development because of food provision, employment generation and so on. In Nigeria, a high percentage of the population earns their living from agricultural enterprises and therefore contributes to the development of the nation. Nigeria's urban population is high and estimated to account for at least 25% of the total while the rural population accounts for the rest 75%. (Anon, 1998).

This study was carried out only in Lafia Local government area in order to assess the impact of the biological control of tsetse fly project on cattle production. The biological control of tsetse fly project (BICOT was a cooperative undertaking by the Federal government of Nigeria and the international Atomic energy agency (IAEA), with financial support provided to the Agency by the Federal republic of Germany, Belgium, Sweden and Italy (Anon, 1985). Therefore, Lafia was chosen as a case study to illustrate the changes that have occurred as regards to impact of tsetse fly and trypanosomosis on cattle management practices in an area where the Federal Department of Livestock and Pest control Services through BICOT was actively involved in tsetse fly and trypanosomosis control/ eradication between 1979 and 1984. During the active phase of the project the target tsetse fly species were eradicated but due to lack of funding for the second phase, control activities were suspended, hence the need for this study in which the author intend to create awareness about this topic.

In Nigeria, before the oil (petroleum) boom, over 70% of the national income was being derived from agriculture, out of which the livestock sub-sector contributed significant percentage. The livestock sub-sector's contribution to the country's Gross Domestic Product (GDP) are 56% between 1960 and 1969, 24% from 1970-1979 and 22% from 1980-1985 (Anon, 1998). Nigeria and other developing countries have within the past few decades witnessed a rapid population growth without a corresponding increase in livestock production. One of the major hindrances to livestock production according is trypanosomosis Onyiah (1997). According to Gyening (1993) African animal trypanosomosis like any other economically important animal disease has always been of concern to FAO (Food and Agricultural Organization).

Management determines to a large extent the well being of animals. The principal cattle owing peoples of Africa are generally nomads. Nomadism is a production system, which is only to be found rarely in its original form nowadays. The percentage of nomadic animal holders in the entire population is reducing everywhere (Seifer, 1996). It is now a common feature to see different categories of cattle owners with different management systems. This include total confinement in which feed, water and medication are provided, night confinement in which cattle are allowed to graze during the day and confined in the night, with feed and water seldomly provided. Another system which is common among the Fulani is semi-nomadism and transhumance (Seifer, 1996). Under this system, the cattle are led to the field by cattle rearers. They are usually led to a predetermined site and stream from morning till evening, and on returning back to their settlement, the animals are left outside in the open place.

There are some factors, which are usually responsible for the type of management system adopted by livestock farmers. Prominent among these are; diseases, feed (grazing area) and water (Oluwafemi, *et al*, 2001). Cattle owners especially the Fulanis usually move their animals about in search of feed and water. However, the presence of tsetse fly excludes livestock from large areas of considerable agricultural potential by virtue of the severity of the diseases caused by tsetse-fly transmitted trypanosomes. (Connor, 1989). The risk becomes very great in the dry season as cattle owners are compelled to take their flock into known infested bush in order to obtain sufficient grazing materials to sustain the animals. In view of the appeal by cattle farmers in the present study area for government's assistance (Oluwafemi, *et al*, 2001), an evaluation of this nature becomes very essential. Therefore, the objectives of this study were to establish herd ownership status, herd size and management systems of cattle in Lafia Local Government Area of Nasarawa state, Nigeria, with a view to determining the major constraints to livestock especially cattle productivity and the possible point of intervention.

MATERIALS AND METHODS

Study Site:

The study was carried out in Lafia Local Government area of Nasarawa State, Nigeria. The area is one of the most productive agricultural zones of Nigeria where management and or any other constraints can make significant difference in the level of productivity. Nasarawa state was originally part of Plateau state and is located next to the Federal Capital Territory of Abuja. The state is in the central area of the middle belt region along latitude 7° North and longitude 7° and 10° East. Annual temperature is about 28° C with a maximum temperature of about 36°C in March. The annual rainfall varies between 131.75cm in some places to 145cm in other places. Situated in the tropical zone of the country, Nasarawa state experiences both hot and cold weather. The major breed of cattle in the area is the white Fulani cattle (Bunaji), with very few Sokoto Gudalis (Bokoloji).

Data Collection

This involved the use of structured questionnaire to collect information about this from the cattle rearers / owners within the study area. Two hundred (200) copies of the questionnaires were administered during the

study period out of which 185 were returned. Simple random sampling was employed for effective selection of respondents in the study area. The questionnaires were administered by the field staff of the Biological Control of Tsetse Fly Project (BICOT) including the author as the principal investigator. Some of the issues/questions addressed by the questionnaire include age of respondent, ownership status, herd size, source of grazing and drinking water, knowledge of diseases or constraints, breed of cattle and their suggestions for the government among others.

Data Analysis: This involved the use of descriptive statistics such as frequency distribution, calculation of percentages, arithmetic means, ratios and proportions

RESULTS

Herd Ownership Status

The result of this study showed that some of the respondents are not cattle owners. This was due to the fact that the questionnaires were administered at different places. These include cattle markets, cattle Fulani houses, small-scale farmers' houses, etc. The result revealed that 131 (70.81%) of the respondents are cattle owners, 39 (21.1%) are either their children or keepers who usually assist the cattle owners, while 15 (8.1%) are helpers who keep cattle for others based on commission.

Herd Size

Herds within the study area are of various sizes as shown in Table 1 below:

Table 1; Herd size

Size	Frequency	Percentage
Less than 20	61	33
21-30	38	20.5
31-40	29	15.7
41 and above	32	17.3
No response	25	13.5
Total	185	100

One common feature among the settled cattle owners is the growing of crops like Guinea corn, maize and yams. This is mostly practiced by small holder farmers as it could be observed from the above result (Table 1) that 33% of the respondents have less than 20 cattle. This according to Seifer (1996) is semi-nomadism. The herds are composed of breeding cows, calves, bulls, and heifers. The bulls are mostly sold out for slaughter, some are kept for breeding but generally the use of bulls as work oxen is not common in the study area.

Management Practices

The management systems observed in this study were total confinement, night confinement with or without tattering, semi-nomadism and transhumance. Cattle owners, who keep their cattle under total confinement as revealed by this study are usually the small scale farmers. Twenty-seven (14.60%) respondents are involved. Under this system, feed, water and sometimes medication are equally provided for the animals. They are mostly fed with crop residues and household remnants like Guinea corn, maize residues and yam peels. Under this system also, cut and carry grasses and browses are usually fed to the cattle. In the case of night confinement with or without tattering, involving eighty-six (46.5%) as product feed and water are seldomly provided. The animals are usually released to go out for grazing in the morning and come back in the evening. Under this system, the cattle are usually directed to the field by the herdsmen. The type of night confinement observed during the study varies from backyard fenced to outside fenced paddock. Some are roofed while some are unroofed. This system is mostly common with owners of less than 20 cattle in the study area. In case of the nomads, their management system includes semi-nomadism and transhumance. Semi-nomadism is oriented

towards pastoral animal husbandry, however farming is practiced by part of the group. Transhumance management system on the other hand is practiced in the study area during the dry season. Under this system, some of the herdsmen usually migrate with their herds in search for pasture and water while the rest of the group remains in settled camp or villages. The extent and direction of migration is however governed by factors like: the size of the herd, availability of water for people and animals, the type and amount of pasture, the incidence of disease and spread of disease vectors (e.g. tsetse flies) among others (Table 2). The health problems revealed by the survey as identified by 152 (82.2%) of the respondents include: trypanosomosis, skin diseases, worm infestations, foot rot, liver fluke and Contagious Bovine Pleuropneumonia (CBPP). 7 (3.8%) claimed to be ignorant of these diseases, while 26 (14.1%) did not respond. One hundred and fourth-eight (148 or 80%) of the respondents are familiar with tsetse and trypanosomosis, 6 (3.2%) are not while 31 (16.8%) refused to comment. Apart from tsetse flies, there are other fly problems in the area. Majority of the respondents (165 or 89.2%) claimed to have these problems. Some of the other flies mentioned due to stomoxys, tabanids and hypobosca species. Disturbance, rough skin and wounds are among the signs mentioned due to the effects of these flies on their cattle.

Table 2: Management practices used by the respondents

Practices	Frequency	Percentage
Total Confinement	27	14.6
Night Confinement with or Without tethering	86	46.5
Semi-nomadism	40	21.6
Transhumance	32	17.3

Table 3: Identification of health problems as indicated by the respondents

Question	Frequency	Percentage
Existence of health problems	52	82.2
Ignorance of diseases	7	3.8
No response	26	14.1

Treatment of animals is recognized by cattle owners in the study area as a result of their awareness of the effects of disease(s) on their animals. Majority of the respondents 155 or 83.8% usually effect treatment, (3 or 1.6%) do not while (27 or 14.6%] do not comment on this. However, there are different occasions / conditions during which their animals are treated. This is as shown in Table 4 below:

Table 4. Conditions that may prompt treatment of animals by the farmers

Response	Frequency	Percentage
Whenever they are sick	141	76.2
After applying your own treatment without effect	16	8.6
When one of them dies	13	7.0
Don't know	15	8.1

Forty-eight (26.0%) of the respondents seek veterinary assistance from Government Veterinary Clinics, 28 (15.1%) seek assistance from local veterinary clinics, 84 (45.4%) through drug seller while 25 (13.5%) make use of other sources like local herbs

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Table 5: Sources of veterinary assistance to the farmers

Source	Frequency	Percentage
Government veterinary clinics	48	26.0
Local Vet. Clinics	28	15.1
Vet. Drug sellers	84	45.4
Other sources (self, quacks)	25	13.5

As revealed by this study, the use of trypanocides like Berenil, samorin, homidium and other veterinary drugs like antibiotics and deforming drugs are a common practice in the area. Nearly all the cattle owners are familiar with these drugs. This is one of the reasons why cattle owners can settle in the study area despite the problems of tsetse and trypanosomosis complex and other diseases. The major constraints to livestock especially cattle production in the study area were identified as diseases, inadequate government owned veterinary clinics, existence of fake veterinary personnel, lack of veterinary extension services and the high cost of veterinary drugs and services among others. Because of the importance of livestock farming in providing livelihood for the respondents and their family, 142 (about 77%) of them are prepared to make commitment to livestock development programme such as vector control, 29 (about 16%) are however not prepared to do this while 14 (about 8%) did not respond to this question.

DISCUSSION

The study area is noted for its vast agricultural potentials (both in crops and livestock). These areas are actively involved in rearing of cattle and other animals like goat and sheep (although cattle production is the main focus of this study). Herd sizes revealed by this study showed that majority of the respondents (33%) are small-scale farmers. A lot of constraints including diseases, lack of capital and inadequate veterinary services among others are responsible for this development where this group of farmers can only keep less than 20 cattle.

In the same vein, the observed management systems in this study are largely determined by the above mentioned constraints. The small-scale cattle farmers prefer to manage their cattle under a confined environment as a way of reducing their exposure to diseases and fly problems in the field. This invariably leads to less need for veterinary drugs and services even though this system requires extra labour to feed and water the animals. Other management systems observed in the area such as night confinement and semi-nomadism are common with cattle owners who have higher flock sizes. According to this study, such sizes range from 21-30, 31-40, 41 and above. These groups of owners usually take out their animals for grazing in the field from about 8.00a.m. to around 6.00p.m. daily. During such trips, the animals are exposed to various hazards especially tsetse and trypanosomosis. During this study, it was revealed that cattle owners are familiar with the effects of tsetse fly and trypanosomosis , and some of the effects mentioned by them include: poor growth, rough hair coat, emaciation, anaemia, general poor condition, and sometimes death.

CONCLUSION

The productivity of livestock especially cattle in the study area could increase if adequate veterinary services (among other relief measures) is provided. Government owned veterinary clinics are not sufficient in the area resulting in a situation whereby 52.8% of them rely on veterinary drug sellers for drugs while they do the treatment themselves. The trypanocidal drugs, which they are familiar with, are Berenil, Samorin and Homidium, with 42.7%relying on Berenil. 76.2% of these cattle owners usually treat their animals only when the animals are sick and therefore depend less on prophylactic treatment. The fairly good performance and eneral outlook of these animals as identified during the study showed that the animals can perform better if ppropriate policy regarding the earlier mentioned constraints is given due consideration. A vivid example was le success recorded by the first phase of the Biological Control of Tsetse Fly Project (BICOTI) in the study ea (Anon, 1985 and Ilemobade, *et al,* 1985). In this study it was discovered that many people are interested in estock (especially cattle) production as evident by the number of small holder farmers in the area. More

people will therefore be encourage to go into livestock farming, thereby generating employment and reduce poverty if only the constraints to livestock farming are removed or drastically reduced. All the information and data provided by this study should therefore be used by all appropriate authorities concerned to develop appropriate policy instruments and implementation strategy against these constraints in the study area in particular and Nigeria in general.

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