Livestock production pattern of agropastoralists in peri-urban centres of south-west Nigeria

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Abstract

The remarkable reduction of tsetse fly and its vector disease trypanosomosis in the South West zone of Nigeria has led to the development of agropastoralism in the zone. This study was carried out by administration of structured questionnaires to farmers in three towns (Oyo, Ogbomosho and Saki) in order to highlight some of the factors influencing production in the area. It was found that in all the three towns animals were maintained on free range grazing, browsing and offer of crop residues. The most favoured breed kept is the Bunaji and Ogbomoso had the highest concentration (52.16%) of this breed. Labour allocation among agropastoralists was based on sex. Diarrhoea was the prevalent disease among the adult animals in wet and dry seasons while sand eating was common among the calves. In all the centres, cattle constituted the major ruminant in stock (77%) while sheep and goats accounted for 15% and 8% respectively. A preponderance of female cattle over the male for all the breeds was recorded in all the towns. But Saki had the highest number of cattle in stock and Oyo the lowest. Feed supplements offered all year round were salt lick and grains. Most of the agropastoralists depended on the use of local herbs and such other orthodox methods of combating diseases affecting the herd.

Key words: Livestock production, agropastoralism, peri-urban, South West, Nigeria.

Introduction

Rearing of domestic livestock either at subsistence or commercial level is widespread in the Nigerian economy. Cattle and to a lesser extent sheep and goat production are generally associated with the pastoral Fulani who are reputed to own approximately 90% of the national herd (Suleiman, 1998). Agropastoralism, in Nigeria, depends on the use of crop residues and open range. Its land use management is characterized by transhumance system due to vegetational variations and agricultural practices and tsetse fly infestation. Agropastoralism is an age long traditional production system in the Northern Savannah but a system that started to evolve in the last decade

in which farmers combine cattle production with crop cultivation. Mohammed (1990) stated that a sizeable population of agropastoralists settled in the hinterlands of the urban centers in the derived savanna zone of Oyo State of Nigeria were originally cattle pastoralists. He stressed that such rearers had been displaced out of their traditional territories in the northern areas of the country by a variety of agro-ecological and socio-economic factors and thus their influx into the favourable zones of the Southwest. With displacement of the Fulani pastoralists from their traditional Northern base and their resultant influx into the Southwestern zone, a new system of livestock production has been observed to be evolving in this zone since the 1990s. Not only

is the size of the herd decreasing in number but the pastoralists are also settling down and taking up crop farming in combination with cattle husbandry. As a result of this metamorphosis, new opportunities for growth are opening up and also new challenges are being faced. Therefore, the present study was undertaken to provide information on the livestock production system in the study zone.

Materials and Methods

Area of Study

The study was confined to three peri-urban areas of Oyo State, South West of Nigeria. The selected areas for the study were Saki, Ogbomoso and Oyo and their environs. In this study, a peri-urban area is therefore taken to denote the area lying with a circle of maximum of 25 km radius from the outskirts of the specified urban center. Based on adaptable previous surveys and past classifications of cattle agropastoralists conducted in these areas by the International Livestock Research Institute (ILRI), the sample was limited to 60 pastoralist households (respondents) equally divided among the three selected towns i.e. 20 per town.

Methods of data Collection

The instruments for data collection, which spanned a period of two years, were observations and a combination of informal and formal questionnaires. Primary data was collected by the administration of both open-ended and close-ended structured questionnaires to the sampled farmers in the study area. The

questionnaire was broadly classified into five main issues namely general farming activities and labour issues, feed and feeding systems, production and lastly health issues. The interviews were conducted in the early hours of the day before the pastoralists departed the homestead (ruga) with animals for grazing. Descriptive statistics were used to organize the data collected.

Results and Discussion

Presented in Tables 1-4 are the results of the factors of production employed by the respondents. From Table 1, the agropastoralists fed their cattle by grazing, browsing and offer of crop residues. Much difference was not observed in the mode of feeding of cattle by the farmers among the study centers except in grazing plus crop residues. Fifty percent of farmers in Oyo center were involved in this practice. The general overview revealed that 61.7% of the pastoralists fed their animals with combinations of grazing, browsing and crop residues. The mode of feeding least was grazing and browsing accounting for only 13.2% among the farmers. Since agropastoralism is evolving from the nomadic production system, similar feeding pattern is retained with the inclusion of crop residues as agropastoralists have access to crop residues from their own farms. According to ILRI (1994) report, sedentary pastoralists graze their cattle from April to November, feed their own crop residues between December and February and then on a mixture of pasture regrowth and tree browse.

Table 1 Mode of cattle feeding by agropastoralists

Mode of Feeding	All (%)	Oyo (%)	Ogbomoso (%)	Saki (%)
Grazing + crop residues	13.30	20.00	10.00	10.00
Grazing + browsing	25.00	30.00	25.00	20.00
Grazing, browsing + crop residues	61.70	50.00	65.00	70.00

Table 2 shows that the favoured breed of cattle in agropastoralist stock is the Bunaji with 51.16% with a higher percentage of this being

kept in Ogbomoso center. The Keteku was the breed least kept by farmers (21.7%). Waters-Bayer (1988) reported that Fulani

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agropastoralists have a preference for white Bunaji cattle, which are reputed for their higher milk production levels and faster growth rates. Mohammed (1990) also established that the interest in the Bunaji breed in the zone despite

their being susceptible to trypanosome infection is an index of the less relevance of trypanosomosis as a limiting factor to cattle breeding in the zone.

Table 2 Breeds of cattle reared by agropastoralists in the different ecological zones(%)

Breed	Average	Oyo	Ogbomoso	Saki
Bunaji	13.20	12.50	16.40	10.70
Keteku	5.60	5.50	6.00	5.30
N'dama	7.00	5.60	10.33	4.00
Total	25.80	23.60	32.73	20.00

Table 3 shows that labour allocation is based on sex because there were predominantly male and female tasks in the household. While herding and milking are exclusively male jobs, processing and sale of milk and kraal cleaning are mainly for females in all locations. Okoruwa (1994) observed a hierarchical structure in

which the children under school are in training under the adults until they themselves are mature enough to sustain the production chores. In light of this, the tradition of cattle husbandry and management is passed down from one generation to another.

Table 3 Labour allocation in household of agropastoralists

Activity	All	Oyo	Ogbomoso	Saki
Herding	AM	AM	AM	AM
	MC	MC	MC	MC
Milking	AM	AM	AM	AM
	MC	MC	MC	MC
Processing of milk	AF	AF	AF	AF
	FC	FC	FC	FC
Sale of milk	AF	AF	AF	AF
	FC	FC	FC	FC
Kraal cleaning	AF	AF	AF	AF
	FC	FC	FC	FC

AM = Adult Male; MC = Male Child; AF = Adult Female; FC = Female Child

Common to all areas of study as shown in Table 4 are problems of diarrhoea in the wet season and low milk production plus diarrhoea in the dry season by adult cattle. Sand eating was peculiar to calves in the dry season only. The exact cause of sand eating by the calves is not known but iron deficiency in the body could lead to depraved appetite also called "pica" in which cattle eat stone, wood and other objects

around. The dry season is characterised by scarce feeds with drastically reduced nutrients that may not meet the nutrient requirements of the animals. Thus, there are many tendencies for any animal to develop such vices. Cases of lowered milk production were reported also in the dry season, which might be associated with poor quality of feed available in the dry season as established else where (Adewumi, 1997).

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agreement with the report of Mohammed (1990) and Waters-Bayer (1988). Also, this sex disparity can be viewed as a reflection of the small number of cattle in stock. Most pastoralists interviewed kept or retained only

one breeding bull for serving the females and some did not have any; instead they hired breeding bulls from neighbouring household to serve their female animals.

Table 6 Cattle herd size and structure

Breed	Total No	Total adult male	Total adult female	Female			Female Calf	
				Milking	Dry	Heifer	Suckling	Weaned
Bunaji	13.2	1.17	7.43	2.78	3.07	1.58	1.44	1.58
Keteku	5.6	-	3.24	1.27	1.27	0.70	0.60	0.50
N'dama	7.0	-	4.77	1.57	1.87	1.33	1.00	1.40

Table 7 shows the cattle ownership record. Saki had the highest number (32) of cattle in stock and Oyo had the lowest number (18). The numbers are small relative to the number of cattle kept by nomadic pastoralists. Mohammed (1990) reported the tendency of the herd size

kept by agropastoralists to drop as they begin to settle in a permanent location. The involvement of herdsman in crop farming is suggested to be a cause for this drop in herd size as less time became available for the care of large herds of animals.

Table 7 Cattle ownership record

Parameters	All	Oyo	Ogbomoso	Saki
Total No. of cattle stock	25.41	18.10	26.73	31.40
No. belonging to pastoralists	14.91	7.10	17.10	28.07
No. being taken care of	1.50	7.00	7.80	3.33
Duration (years)	10.00	11.00	11.00	9.00

From table 7, it was also observed that 23.6% of the cattle stock belonged to other people and are being taken care of by the agropastoralists. Jabber (1992) made similar observations. The local farmers have developed interest in cattle husbandry and management and usually give

cattle to Fulani pastoralists to cater for them. These local farmers sometimes hire sedentary pastoralists to manage their herds too and take up management themselves after gaining enough experience.

Table 8 Extent and seasons of feeding supplements

Parameters	All	Oyo	Ogbomoso	Saki
No. of farmers feeding supplements	90	100	100	100
Types of supplement fed				
Late dry season only (%)	70.00	10.00	25.00	15.00
All season (%)	30.00	90.00	75.00	85.00
Classes of animal supplemented				
Lactating cow (%)	5.00	5.00	5.00	5.00
Stall cattle (%)	1.00	-	5.00	-
All (%)	93.30	95.00	90.00	95.00

Table 4 *Prevalent diseases affecting cattle herd*

Location	Age	Wet Season	Dry Season
All	Calves	-	Sand eating
	Adult	Diarrhea	Low milk production + Diarrhea
Oyo	Calves	-	Sand eating
	Adult	Diarrhea	Low milk production + Diarrhea
Ogbomoso	Calves	-	Sand eating
	Adult	Diarrhea	Low milk production + Diarrhea
Saki	Calves	-	Sand eating
	Adult	Diarrhea	Low milk production + Diarrhea

Results of the livestock herd in stock including cattle, sheep, goat and poultry are presented in Table 5. There were more cattle (31.0%) and poultry (30.05%) in Saki area than other centers. In all areas, cattle constituted the major ruminant in stock (77.0%) than sheep (15%) and goats (8%). Sheep were found to be higher in stock because of the ease of their management and herding along with cattle unlike goats which are more hardy to handle. Suleiman (1988) reported that agropastoralist stock comprises

mainly of cattle and to a lower extent sheep and the goats. Keeping of poultry by the pastoralists is a sharp contrast to the livestock composition of nomadic pastoralists especially as poultry cannot be herded along with cattle like other ruminants. The settling down of pastoralists is believed to be directly responsible for their keeping of poultry stocks as part of livestock kept. This however, does not translate into much increase in meat production, as their tropical livestock units (TLU) are still very low.

Table 5 *Livestock herd size and structure (%)*

Parameters	All	Oyo	Ogbomoso	Saki
No. of cattle	25.41	18.10	26.73	31.40
*TLU	17.79	12.67	18.71	21.98
No. of sheep	5.11	5.00	5.35	5.00
*TLU	0.51	0.50	0.51	0.50
No. of goats	2.50	2.53	2.66	2.51
*TLU	0.25	0.23	0.26	0.25
No. of poultry	24.90	24.50	20.30	30.05
*TLU	0.25	0.25	0.20	0.40

*TLU: Tropical Livestock Unit.

Table 6 shows the cattle herd size and structure. A preponderance of female cattle over the male was recorded in all the three centers and for all the different breeds of stock. It was also observed that most of the males were below 3

years old. The disparity in sex proportions of animals kept is believed to be connected with the major reasons for keeping cattle, which is milk production. This accounts for the higher incidence of female cattle stock. This result is in

Table 8 shows the type and season of feeding supplements. The animals were supplemented with salt lick and grains all year round. As the feeding pattern is more intensified, sustainable beef and milk production is ensured. This does not only guarantee faster and increased returns but can also activate further investment into the

production system by entrepreneurs. All these will go a long way in increasing the local production of beef and dairy products. Most agropastoralists depended on the use of local herbs and self-medication for treatment of their animals as shown in Table 9.

Table 9 Disease treatment methods among cattle farmers

Means of treatment	All	Oyo	Ogbomoso	Saki
Veterinary services (%)	5.60	5.00	5.00	7.10
Vaccination (%)	-	-	-	-
Local herbs + self medication (%)	94.40	95.00	95.00	92.90

The treatment proceedings and techniques were however not well documented and standardized although the potency of the orthodox practices of the farmers had some efficacy.

It can be concluded from the results of the survey that the emergence of agropastoralism in the study area has produced a new system of agricultural production bringing about crop-livestock interaction. Cattle ranked more than three-quarters of the ruminants reared in the area with Bunaji accounting for more than half. The study area has more females than male cattle understandably because of the need for milk, which is sold to supplement household income. Results of the study also showed that the settling down of agropastoralists in the peri-urban centers is a great asset as their development can be quickly activated and well focussed. Not only can marketing chains be established for their dairy products, but also education and other social amenities such as good roads, health care services, pipe borne water and other necessities can be channeled and directed at them.

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