

Camels and Donkeys as Pack and Transport Animals in Semi-Arid Northern Nigeria: Herd Composition, Management and Utilisation

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Abstract

A survey of 201 camel and donkey owners/users of 986 animals at 10 locations in Sokoto State of Nigeria revealed the following about the animals: average herd size; 4 and 6 for camels and donkeys, respectively; types of camels found, 'Bakinbiri', 'Ja', 'Mahari' and 'Taqiwa'; types of donkeys found, 'Aurako', 'Bakinjaki', 'Ehokusu', 'Goho', 'Gwambaza', and 'Janqora'; 'Ja' camels and 'Ehokusu' donkeys were the most populous in the study area; overall sex ratio, 1:1 in both species. Management of the animals is largely extensive. Average age at commencement of training, 2.6 and 3.4 years for donkeys and camels respectively; training period, 2.5 and 3.0 months: proportion of herd put into use, 80% for camels and 65% for donkeys; daily income per animal, ₦22. The use of the animals for pack and transport seems to be a lucrative commercial venture. Further studies will confirm or deny this.

Introduction

Despite the introduction of motorised transportation, camels and donkeys remain an important means of transportation in the arid and semi-arid regions. Apart from use by nomads who are continuously seeking grazing and water, these animals are employed in transporting farm produce to local markets (Jahnke 1982; Katsina 1990). Camels provide a cheap and reliable alternative for short distance transport. Many kinds of goods are regularly transported over short and medium distances wherever the volume or value of trade is too low to make motorised transport feasible, and where roads are bad or non-existent. During the recent famines in the vast dry areas in Africa, camels were frequently used to carry relief food to remote, otherwise inaccessible locations (Schwartz 1988).

Sokoto State has a semi-arid climate. Pack animals play important roles in the movement of people and agricultural goods in the area. This study was therefore carried out to gather baseline information on the uses of camels and donkeys for these roles in the study area. It is hoped to be followed by detailed investigations with a view to enhancing the contribution of the animals to the socio-economic life of agropastoralists.

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Methodology

The Survey Area

The present study was carried out at 10 locations in Sokoto State of Nigeria – Bodinga, Dange, Goronyo, Gwadabawa, Kware, Rabah, Sokoto, Tambawal, Wamako and Wurno.

Sokoto State is located in the north-western part of Nigeria, bordering the Republic of Benin to the west and Niger Republic to the north. The state falls within two vegetational zones: the Sudan savanna and northern Guinea savanna. The climate is semi-arid and characterised by alternating wet and dry seasons with a short cool and dry period – 'harmattan' -which starts in late October and ends in late February. The duration and intensity of annual rainfall increase from north to south, ranging from 60–160 days and 635 to 1000 mm respectively. The mean monthly temperature is generally high, 20–38°C, with the highest temperature occurring in April. Relative humidity ranges from 12 to 71% with the highest occurring in August.

The Survey

By means of structured questionnaires, a total of 201 owners/users of camels and donkeys were randomly interviewed to obtain first-hand information on the pack uses of animals in Sokoto State. Aspects covered were respondent's biodata, herd size and composition, types of stock, management and

utilisation. Data collected were analysed using mean, percentage and range.

Results and Discussion

The Respondents

Table 1 shows the bio-data of the owners/users of the camels and donkeys in the survey area. The 201 respondents were mostly young men of mean age 33.8 years (30.0–38.2) with about 5 years (3.7–7.2) of experience. They were all married with an average family size of 4 persons. Estimated overall mean annual income from the use of animals for the purposes under consideration was ₦ 8500.

Herd Size and Composition

The total sample sizes of camels and donkeys surveyed were 324 and 662, respectively (Table 2) with the overall mean herd sizes of 4 camels and 6 donkeys. There were small variations in the herd sizes for the two species among locations. The average herd size of 4 camels is much smaller than 9 animals reported earlier for breeding herds in the same area (Hassan et al. 1988). The number of donkeys encountered in the survey was more than twice greater than that of camels. This is to be expected because the smaller and more manageable size attracted more respondents to them. Sex ratio in the two species was very close to unity. This is much higher than one-third reported for camels (Hassan et

al. 1988). It however shows that animals of both sexes are employed for packing and transportation in almost equal proportion.

Types of Animals

Based on coat colour pattern, 4 distinct types of camels and 6 types of donkeys were found in the survey area. They are the 'Bakinbiri', 'Ja', 'Mabari' and 'Taqwa' for camels, and 'Auroko', 'Bakinjaki', 'Ehokusu', 'Goho', 'Gwambaza' and 'Janqora' for donkeys. Tables 3 and 4 show the distribution of the various types in the survey area. The 'Ja' camels constituted the largest proportion (40%) and are almost evenly distributed. Of the 6 donkey types, the 'Ehokusu' was the most frequent. There seems to be great variation in the popularity of the various donkey types among locations. For instance, the highest concentration of the 'Aurako' was found in Wurno while the 'Goho' dominated at Dange. The distribution also shows the relative non-popularity of 'Bakinjaki', 'Gwambaza' and 'Janqora' donkeys in the study area.

Management

Very little attention was paid to the housing of the animals, which were kept in open yards at nights, hence the lack of data on costs of housing and holding facilities. The animals were fed mainly on crop residues (rice and wheat stover, cereal stalks, onion stalk, sugarcane top) supplemented with cereal grains and salt. They were normally led to

Table 1. Particulars of respondents (mean values).

Location	Age (Years)	Experience (Years)	Annual Income (N)
Bodinga	34.1	5.2	9475
Dange	34.4	4.7	8825
Goronyo	31.9	4.4	7950
Gwadabawa	32.1	4.5	8470
Kware	31.3	3.7	8425
Rabah	36.1	6.4	7125
Sokoto	38.2	7.2	8222
Tambawal	33.3	4.3	8900
Wamako	30.0	4.3	8666
Wurno	37.0	4.6	8933
Overall Mean	33.0	4.9	8499

Table 2. Pattern of Ownership and Mean Herd Size.

Location	Camels		Donkeys					
	No. of resp.	No. of %	No. of Mean		No. of Mean			
			Animals	Herd	resp. %	Animals	Herd	
Bodinga	7	35	22	3.1	13	65	74	5.7
Dange	11	52	58	5.3	11	52	79	7.2
Goronyo	8	40	26	3.3	10	50	40	4.0
Gwadabawa	9	45	33	3.7	11	55	49	4.5
Kware	8	40	30	3.8	12	60	67	5.6
Rabah	7	35	33	4.7	13	65	72	5.6
Sokoto	11	55	43	3.9	9	45	74	8.2
Tambawal	5	25	19	3.8	14	70	65	4.6
Wamako	11	55	31	2.8	13	65	64	4.9
Wurno	8	40	29	3.6	15	75	78	5.2
Totals	85	—	324	—	121	—	662	—
Mean	8.5	42.2	3.8	3.8	12.1	60.2	5.5	5.5

Table 3. Pattern of Ownership and Mean Herd Size Distribution of various types of camels in the study area.

Location	Types, number and (%)				
	Bakinbiri	Ja	Mahari	Taguwa	Total
Badinga	5 (23)	9 (40)	6 (27)	2 (19)	22 (100)
Dange	11 (19)	28 (48)	13 (22)	6 (10)	58 (100)
Gorongo	5 (19)	12 (46)	9 (35)	(0)	26 (100)
Gwadabawa	4 (12)	21 (64)	6 (18)	2(6)	33 (100)
Kware	2 (7)	18 (55)	12 (36)	6(20)	33 (100)
Rabah	3 (9)	18 (55)	12 (36)	0 (0)	33 (100)
Sokoto	4 (9)	10 (23)	17 (40)	12 (28)	43 (100)
Tambawal	7 (37)	12 (63)	0 (0)	0 (0)	19 (100)
Wamako	6 (19)	16 (52)	5 (16)	4(13)	31 (100)
Wurno	0 (0)	15 (52)	14 (48)	0 (0)	29 (100)
Total	47 (15)	159 (49)	88 (27)	30 (9)	394 (100)

Table 4. Distribution of various types of donkeys in the study area.

Location	Types, number and (%)						Total
	Aurako	Bakinjaki	Ehokusu	Goho	Gwambaza	Jangora	
Bodinga	30 (41)	8 (11)	11 (15)	19 (26)	6 (8)	0 (0)	74
Dange	20 (25)	7 (9)	9 (11)	35 (44)	8 (10)	0 (0)	79
Goronyo	0 (0)	4 (10)	22 (55)	10 (25)	2 (5)	2 (5)	40
Kware	19 (28)	11 (16)	25 (37)	6 (9)	3 (5)	3 (5)	67
Rabah	13 (18)	8 (11)	27 (38)	24 (33)	0 (0)	0 (0)	72
Sokoto	14 (19)	1 (1)	32 (43)	20 (27)	7 (10)	0 (0)	74
Tambawal	13 (20)	0 (0)	34 (52)	18 (28)	0 (0)	0 (0)	65
Wamako	2 (3)	5 (8)	27 (42)	10 (16)	6 (9)	14 (22)	64
Wurno	42 (54)	8 (10)	9 (12)	12 (15)	5 (6)	2 (3)	78
Total	163 (25)	62 (9)	219 (33)	160 (24)	37 (6)	21 (3)	662

water sources such as streams, rivers or ponds for drinking water. Disease conditions frequently noticed in the herd were swollen neck and vomiting which were treated by oral administration of herbal extracts, and salt and water respectively.

Utilisation

Selection of animals for work is based mainly on age, size and health status. The animals normally undergo some training before use. Mean ages at commencement of training and duration of training

Table 5. Mean age at commencement and duration of training.

Location	Age (years)		Duration (months)	
	Camel	Donkey	Camel	Donkey
Bodinga	2.5	2.5	3.5	2.5
Dange	3.5	2.3	2.6	2.3
Goronyo	4.2	3.0	3.0	2.8
Gwadabawa	4.3	2.0	2.5	2.0
Kware	3.0	2.2	3.7	2.5
Rabah	2.9	2.7	2.0	3.0
Sokoto	3.5	2.5	3.3	2.7
Tambawal	3.2	3.0	3.2	3.2
Wamako	4.0	2.4	3.1	2.0
Wurno	3.3	3.0	3.2	2.4
Overall Mean	3.4	2.6	3.0	2.5

are 2.6 and 3.4 years and 2.5 and 3.0 months respectively for donkeys and camels (Table 5). The selected animals are trained by carrying children and small loads and following the older ones. Stock replacement takes place on the death of old animals or when they are sold for reasons like bad temperament and poor health. Replacement animals come from within the herd or outside.

About 80% of the herd size of camels was put into use. A lower proportion (65%) was recorded for donkeys. Farm produce transported by the animals in the study area include grains (sorghum, millet and cowpea) onion and potato. Others are hay (Harawal) water, organic manure and sand. The size of load an animal carries depends mainly on its body weight. Charges for service depends on size of load (rather than weight) and/or distance. Donkeys are more commonly used for short distance travel than camels. Using the animals for packing fetches an

average of N21.50 daily. However, the actual daily gain is a subject for further research.

Conclusions and Recommendations

Camels and donkeys will continue to play active roles in the transportation of farm inputs and produce for short distance travels in the study area and other areas with similar characteristics. The rising costs of motor vehicles and spare parts in Nigeria necessitate increased use of animals for rural and urban transportation. This paper presented a mere overview of the transport and pack uses of these animals in the study area. Further studies need to be directed toward the characterisation of the various types of camels and donkeys involved, type or breed evaluation in terms of adaptability and work performance, and cost and return analysis. This will enhance an understanding of the catalytic roles of the animal in agricultural production.

Résumé

Les données suivantes ressortent d'une enquête menée auprès de 201 propriétaires/utilisateurs de chameaux et d'ânes (986 animaux au total) dans 10 localités de l'Etat de Sokoto au Nigéria: effectifs moyens des troupeaux: 4 chameaux et 6 ânes; types de chameaux: Bakinbiri, Ja, Mahari et Taquwa; types d'ânes: Aurako, Bakinjaki, Ehokusu, Goho, Gwambaza et Janqora, avec les chameaux Ja et les ânes Ehokusu représentant les espèces les plus fréquemment rencontrées dans la zone d'étude; taux de masculinité: 1/1 pour les deux espèces. Les animaux sont dans une large mesure élevés dans le cadre d'un système de gestion extensif. Le dressage commence à l'âge de 2,6 ans pour les ânes et de 3,4 ans pour les chameaux, avec une période de dressage de 2,5 et de 3 mois respectivement. Le pourcentage d'effectifs du troupeau mis à contribution est de 80% pour les chameaux et de 65% pour les ânes. Le revenu journalier dégagé par animal est de 22 naira. L'utilisation des animaux pour le bât et le transport apparaît comme une opération commerciale lucrative mais des études complémentaires devront être entreprises pour confirmer ou infirmer cette hypothèse.

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