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Some constraints of ruminant livestock production in the Coastal Savannah Plains of Ghana

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Abstract

Semi-structured questionnaires were administered to 102 randomly chosen ruminant livestock farmers in the Coastal Savannah Plains of Ghana to determine their production practices and the main production constraints.

The involvement of women in livestock production in the Coastal Savannah Plains of Ghana was low (15 %). Forty-nine percent of ruminant livestock keepers interviewed had only one type of animal and among those with more than one, the combination of cattle and goats formed the majority. In all, there were more goat keepers than cattle and sheep keepers. Majority of goat and sheep keepers hold between 1 and 10 animals while majority of cattle keepers had more than 20 animals. In the dry season, 41% of cattle farmers graze their animals within village boundaries, 41% relocated animals 5 -20 km away and 18 % herded cattle to places 1.5 – 6.4 km daily. The most important disease problem of the small ruminants was found to be Peste de petite ruminants (PPR) while that of cattle was dermatophilosis.

Key words: farmers, peri-urban, respondents, supplementary feeding, small ruminants

Introduction

Fifty percent of Ghana's livestock consumption is imported (Sabri et al 2001). This situation may have worsened considering the fact that; beef, mutton and chevron importation into the country increased about 20 fold (943 to 18,491 metric tons; SRID 2010) from 2000 to 2009. This trend indicates a huge potential for growth in the livestock sub-sector. To improve productivity in any agricultural sub-sector, there is the need to assess prevailing production systems in order to identify production opportunities and constraints (Ashley et al 1999). The Coastal Savannah

zone of Ghana ranks second in importance to the Interior Savannah zone in ruminant livestock production (World Bank 1992), but unlike the Interior Savannah, the Coastal savannah zone has bimodal rainfall with a huge potential for forage production. It is also close to areas of high demand for livestock products. Thus, improving ruminant livestock production in the Coastal Savannah Plains of Ghana will contribute significantly to the overall performance of the livestock sub-sector.

The objective of this study, therefore, was to determine the prevailing production practices and constraints of ruminant livestock farmers in the South-Eastern part of the Coastal Savannah Plains of Ghana to serve as baseline information for improving production.

The specific objectives were to determine:

- the demographic profile of ruminant farmers,
- the distribution of ruminant species and type of grazing management practices employed
- major diseases that affect ruminant livestock.

Materials and Methods

Study area

The Coastal Plain is divided into two broad sections; the south-east plains east of the capital Accra (where this survey was carried out) and the plains west of Accra. The south-east coastal plains are very flat with a few isolated hills. The general elevation of this area is not more than 75 m above sea level. The rainfall regime is the dry equatorial type with two rainfall maxima (Rose-Innes 1977). The mean annual rainfall values range between 740 - 890 mm and the average relative humidity falls between 60 - 75 %. The vegetation is predominantly made up of short grasses with small clusters of shrubs and a few trees.

Data collection and analyses

Semi structured questionnaires (pretested) were randomly administered to 102 ruminant farmers. This was structured to access information on gender and training of farmers, livestock types and numbers, predominant disease problems, information on supplementary feeding and grazing management practices. Respondents were selected from three districts within the Coastal Savannah region of Ghana namely; Dangme East, Dangme West and Ga East. Frequencies and percentages were computed from the data gathered using Microsoft Excel software.

Results and Discussion

Gender of livestock farmers

Out of the 102 ruminant farmers interviewed, only 15 % were females compared with a reported 26 % involvement of females in ruminant livestock production in the Interior Savannah zone (Ansah and Nagbila 2011). These studies show a general low involvement of women in ruminant

livestock production in Ghana. It is estimated that 70 % of the world's rural poor are women (DFID 2000). Thus, to improve the standard of living in rural and peri-urban areas, more women need to be encouraged to take up livestock farming.

Species of ruminants kept

Out of the 102 farmers interviewed, 49.0% had only one species of ruminant livestock, 42.2% kept two species while 8.8% had all three species (Table 1). Among those keeping only one species, more than half of them kept goats while among those keeping more than one species, the combination of cattle and goats formed the majority (42.0%). In all, 67, 58 and 38 respondents kept goats, cattle and sheep respectively. This trend can be attributed to the fact that the demand for goats (Chevron) and cattle (beef) is high throughout the year while demand for sheep (mutton) remains low until Muslim religious festivities.

Table 1. Ruminant ownership pattern in the Coastal Savannah Plains

Type of ruminant owned	Number of respondents
Cattle only	15
Sheep only	8
Goats only	27
Cattle and sheep	12
Cattle and goats	22
Sheep and goats	9
All three types	9
Total	102

Herd and flock size

The majority of sheep and goats owners in the Coastal Savannah Plains of Ghana are small-scale farmers (Table 2). This is in harmony with a report by Opong-Anane (2001), who described ruminant livestock production in this area as a small-scale backyard enterprise. Contrary to this report, 81 % of cattle owners interviewed had more than 20 animals. The relatively higher numbers of cattle owned by the farmers may be attributed to the formation of cattle associations in the area. Farmers in such associations interchange knowledge and experience to enhance their businesses. It may also be due to the practice of kraal owners keeping animals for absentee farmers in their kraal.

Table 2. Herd and flock sizes owned by respondents (%)

	Number of animals				
	1-10	11- 20	21-50	51-100	>100
Sheep owners	55.3	23.7	18.4	2.6	0
Goat owners	71.6	25.4	3	0	0
Cattle owners	5.2	13.8	34.4	25.9	20.7

Grazing management

All sheep and goats keepers interviewed indicated that they graze their animals around their settlements and complement it with supplementary feed both in the dry and wet seasons. This is made possible because of the small flocks that are kept. Cattle farmers mostly practice the extensive grazing system. They graze their animals within village boundaries in the wet season but behave differently in the dry season. Out of the 58 cattle owners, 24 (41%) indicated that their animals are grazed within village boundaries at a distance of 1- 6.0km; 24 (41%) said they relocate their animals to villages close to perennial water bodies at a distance of 3.0 – 20 km, while 10 (18 %) indicated that their cattle graze outside their villages at a distance of 1.5 – 6.4 km but are herded back to their kraals at the close of the day. Cattle, and to a lesser extent, sheep and goats almost entirely depend on natural pastures for their sustenance in the Coastal savannah plains. The absence of adequate good quality grazing materials during the dry season poses a great challenge particularly to cattle owners. As livestock spend time and energy in looking for feed, they might not meet their daily feed requirement in the limited grazing period. Smith (1999) reported that walking increases maintenance requirement of cattle at a rate of 10 % per 1.5 km walked. This indicates that body condition for cattle in the Coastal Savannah Plains herded for a distance of 1.5 – 6.4 km daily in search of feed in the dry season will be poor.

Sixty-eight respondents (67 %) indicated that they practiced supplementation. The types of supplementary feed used by farmers were cassava peels, wheat bran, dry maize, silage, cut forage, and spent malt. Cassava peels was the most commonly used by the farmers followed by wheat bran. The rest of the supplementary feeds were used by 12 farmers as shown in Table 3. The number practicing supplementary feeding was high because almost all small ruminant farmers could afford supplementing because of the small number of animals kept. The practice of supplementing was not very common among cattle farmers who require it most.

Table 3. Type of supplementary feed provided

	Silage	Wheat bran	Cut forage	Spent malt	Dry maize	Cassava peels
No. of farmers	3	19	2	1	6	37

Disease problems

The majority of sheep and goats farmers mentioned PPR as the major disease problem while dermatophilosis was named as the main disease problem for cattle farmers (Table 4). These diseases have been mentioned by other authors among the main ruminant livestock disease problems (Oppong-Anane 2001; Sabri et al 2001). According to Oppong-Anane (2001), PPR occurs as an epidemic mostly with high morbidity and mortality rates. Dermatophilosis on the other hand is said to be a bacterial disease that cause scabs and crusts on the skin. To improve the ruminant livestock sub-sector, improved health services (in terms of disease prevention and treatment) at affordable cost need to be made available to livestock farmers.

Table 4. Main disease problems affecting livestock farmers

Type of disease	PPR	Footrot	Dermatophilosis	Others
Number of respondents	20	8	40	12

Conclusion

- The involvement of women in ruminant livestock production in the Coastal Savannah Plains of Ghana is low.
- Small ruminants are mostly kept in small holdings of between 1-10 animals. Cattle are kept in much larger holdings of above 20 animals.
- Cattle, and to a lesser extent, sheep and goats almost entirely depend on natural pastures for their sustenance with cattle trekking long distances in the dry season in search of feed or relocated.
- Despite the dry season feed problem, forage conservation was not a popular practice.
- PPR and dermatophilosis were the most common diseases of small ruminants and cattle respectively.

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