

A Case Study on Major Constraints of Small Ruminants Management in Juba County Central Equatoria State South Sudan

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Abstract: A six month case study was conducted in Juba County South Sudan to identify major constraints encountering small ruminant management systems. A total of 45 respondents were administered with questionnaires in the study area. Secondary relevant data obtained from peer-reviewed journals, records and websites. Descriptive statistics and SSPS-20 were used in data analysis. Results revealed that major constraints of small ruminants management included inadequate knowledge and skills in improved management practices (19.2%), cost of drugs and vaccines (18.3%) and both pasture scarcity during the dry season and irregular demand for sheep and goat products showed 17.5% compared to inadequate herdsmen (0.8%). Internal parasitic infection showed 44.3% compared to pneumonia (32%) which is more common in both Nyarkenyi and Lirya Payams. The external parasitic infestations are commonly observed in Nyarkenyi compared to the other Payams due to poor management system. Livestock diseases were controlled by provision of drugs and vaccines (58.6%) and practiced by most of the farmers in Nyarkenyi and Rejaf Payams compared to Lirya Payam due to accessibility to veterinary services delivery. Further study is needed for identifying and bridging gap areas of veterinary education and extension services delivery to the farmers for sustainable development of sheep and goats production in Juba County South Sudan.

Key words: Constraints, Small Ruminants, Management, livestock Diseases, South Sudan

INTRODUCTION

Livestock production is a tremendous enterprise in East African countries where about 56 % of livestock wealth in Africa is maintained. Small ruminants create a substantial contribution to the prosperity of the people in the region and sub-Saharan Africa (Winrock International, 1992 De Leeuw, 1995). Livestock production constitutes an important livelihood activity for the most

communities in South Sudan. It is estimated that 80% of total populations are agro-pastoralists consisting of a large number of resource-poor households including the returnees and economic migrants (FAO, 2009a).

Nilotic sheep and goats, mountainous dwarf sheep and goats in Equatoria region and fat tailed Toposa sheep and goats in the semi-arid region of Eastern Equatoria State exist (Udo, 2006). Such indigenous goats are characterized by resistance to diseases, good flocking instinct, ability to trek in search of feed, high tolerance to adverse climatic conditions and fluctuating nutrient availability (Kosgey *et al.*, 2008). Small ruminants provide sufficient products to the subsistence farmer's own use (MARF, 2006). Moreover, they provide vast range of services such as immediate cash income, meat, milk, skin, manure, risk spreading/management and social functions (Abebe, 2008).

There are major constraints encountering livestock productivity in South Sudan and contributing to higher production losses, particularly in young stocks (FAO, 2009 b). Respiratory Disease Complex (RDC) was among the most important livestock disease associated with complexes in small ruminants management system (Tibbo, 2006). Moreover, early mortalities as high as 50% in lambs are associated with cold stress, starvation, mismothering among others (Tibbo, 2006). So far little or no data obtained to reveal constraints of small ruminants in Juba County.

This study was aimed to provide baseline data to key stakeholders in Juba County. This will eventually provide an impetus for addressing food and nutrition security and income generating activities in Juba County South Sudan.

MATERIALS AND METHODS

Study Area

The study was conducted in three Payams of Juba County Central Equatoria State which covers an area of 18,396 square km. These Payams include: Rejaf, Nyarkenya and Lirya.

Sampling and Sample Size

Stratified sampling method was used due to a variation in the ages and sexes of small ruminant production farmers. The sample size was 45 respondents due to inaccessibility to some villages in the study area during the rainy season.

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Data Collection

Primary data were collected using participatory approach where structured questionnaires were administered to 45 small ruminant respondents from the three respective Payams. Secondary data were collected from peer-reviewed journals, records and websites.

Data Analysis

Data were managed and analysed using descriptive statistics and SPSS-20 package from which graphical presentations were made.

RESULTS

Table 1: Major constraints encountering small ruminants production in Lirya , Nyarkenya and Rejaf Payams Juba County, Central Equatoria State- South Sudan.

S/No.	Variables	Frequency	%
1.	Inadequate knowledge on improved management practices	23	19.2
2.	Cost of veterinary drugs and vaccines	22	18.3
3.	Scarcity of pasture during the dry season	21	17.5
4.	Irregular demand for small ruminant’s products	21	17.5
5.	Lack of space	16	13.3
6.	Inadequate finance to expand herd size	14	11.7
7.	Security (theft and predators)	02	1.60
8.	Unavailability of laborer to look after flock	01	0.80

From table (1) inadequate knowledge of small ruminant management (19.2%) was the most common challenge facing small ruminant production in the study area. This could be attributed to lack of extension delivery services. This study showed that an ability to control livestock diseases using veterinary drugs became difficult in most areas as the cost of drugs and vaccines was significant reaching 18.3%. While scarcity of pasture during the dry seasons and irregular demand for sheep and goat products in the markets have shown the same percentage of 17.5%.

Table 2: Common livestock diseases challenging small ruminant production in Lirya, Nyarkeniyi and Rajaf Payams, Juba County, Central Equatoria State -South Sudan.

Diseases	Frequency per Payam			Total	
	Lirya	Northern Bari	Rejaf	Frequency	%
Internal parasites	15	15	13	43	44.3
Pneumonia	13	14	4	31	32.0
External parasites	0	14	9	23	23.7

Table (2) showed that internal parasites were highly significant (44.3%) as a common disease in the study area. Whereas pneumonia ranked as second disease (32%) which usually disturbs the rearing of small ruminants in the area. it is more common in both

Nyarkeniyi and Lirya Payams, respectively. The external parasites are more commonly found in Nyarkeniyi Payam compared to other two Payams. Such ectoparasitic infestation could be attributed to poor husbandry and management systems.

Table 3: Disease control measures practiced by small ruminant’s producers in Lirya, Nyarkeniyi and Rejaf Payams , Juba County, Central Equatoria State -South Sudan.

Disease control Measures	Lirya	Nyarkeniyi	Rejaf	Total	%
Stock density reduction	02	0	0	02	3.8
Isolation of sick animal	14	0	03	17	32.0
Delivery of new pasture	0	02	01	03	5.7
Provision of drugs and vaccines	03	14	14	31	58.6

Table (3) shows that provision of veterinary drugs and vaccines represent 58.6% which could obviously reflect that major disease control measures are practiced by most of the small ruminant farmers in Nyarkeniyi and Rejaf Payams. This is ascribed to their accessibility to veterinary services delivery. Meanwhile, Lirya Payam normally depends on isolation of sick animal due to inaccessibility of veterinary drugs and vaccines.

DISCUSSIONS

Inadequate information on improved management practices (19.2%) is the most common constraints encountering small ruminant production in the study area (table1).This is attributed to inadequate extension delivery services due to improper implementation of South Sudan extension policy. This is in line with the report of FAO (2009b) which stated the balance of operations and management between central and local governments, an almost universal absence of clear livestock development

policies and strategies. Moreover the pace of privatization and the possibilities of cost recovery for goods and services are important factors constraining the development possibilities for sheep and goats. However, the major constraints impeding the performances of sheep and goats of smallholder farmers were reported as diseases and predators, water shortage and associated drought (Tibbo, 2000 Tsedeke , 2007 Talore , 2009).

Internal parasites and pneumonia are the most prevalent diseases in the study area (table 2).This could be explained by the attachment of internal parasite larvae to pastures and improper housing system that led to respiratory disease (ILRI ,1998) that constituted major diseases of sheep and goats in sub-Saharan Africa comprising of enzootic pneumonia, pasteurellosis, lungworm infections, diseases of the digestive system that associated with parasites. Tibbo (2006) revealed that respiratory disease complex (RDC) is among the most important diseases associated with complexes in small ruminants husbandry and management. This is due to poor management that creates a favourable

environment for disease incidences. Moreover, Gebretsadik (2012) reported that most common diseases noted from the description of symptoms of diseases in all surveyed areas are Ovine Pasteurellosis, Ovine Pleuropneumonia, dysentery and skin diseases including scabies and internal parasites such as *Haemonchus*, *Hydatid cyst* and *Fasciola* species. The mean prevalence of hydatidosis in Juba County accounted for 6.99% and 2.74% for sheep and goats, respectively (Ochi *et al.*, 2015).

Provision of veterinary drugs and vaccines accounted for 58.2% as a means for disease control (Table 3). Veterinary drugs are supplied from veterinary drug stores though vaccines are received occasionally. Gebretsadik (2012) reported that animals had been only vaccinated against few diseases and treated with veterinary drugs. Thear (1988) presented that routine prevention programmes worthing for goats are treatment against roundworm, fluke and Clostridia infections.

CONCLUSION

Livestock management in the study area is based on the old traditional system which provided enabling environment for such challenges of animal production. Further study is needed for identifying and bridging gap areas in delivering quality extension services to the farmers for sustainable development of sheep and goats production in Juba County.

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Conflict of Interests

Authors declare no conflict of interests

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