

# INFLUENCE OF SOCIO-ECONOMIC FACTORS ON SHEEP MORTALITY AND SALES CONSTRAINTS FACED BY SMALL-SCALE SHEEP PRODUCERS IN NKANGALA DISTRICT, MPUMALANGA PROVINCE, SOUTH AFRICA

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## INTRODUCTION

- Sheep are one of major small ruminants of economic value in sub-Saharan Africa (Oluwatayo\* and Oluwatayo\*\*, 2012).
- They are a source of revenue for smallholder farmers that cannot afford to maintain large ruminant livestock such as cattle (Degen, 2006).
- In South Africa, sheep are widely distributed across the country where they contribute to the livelihoods of the rural population as a source of protein, wool, food security and poverty alleviation (Gatenby *et al.*, 1997; Bela and Haile, 2009; Otte, 2012) and majority of the sheep population in South Africa are owned by smallholder farmers (Sanni *et al.*, 2004; Mbilu, 2007).
- Constraints to small ruminant production, particularly sheep in the tropics includes: diseases, accidents, theft, lack of capital and land (Odeyinka, 2005). Small ruminant livestock production, such as sheep is mainly traditional and extensively characterized by minimal inputs, with greater emphasis on head count than productivity (Osaer and Goosens, 1999).
- Therefore despite their importance and apparent advantages, sheep have not been accorded adequate attention.

## AIM

The main aim of the study was to determine the influence of socio-economic factors on sheep mortality and sales constraints faced by small-scale producers in Nkangala District, Mpumalanga Province.

## MATERIAL AND METHODS

The study was conducted between October and December in 2013 on six local municipalities of Nkangala district in Mpumalanga province where 132 small-scale sheep owners were interviewed using

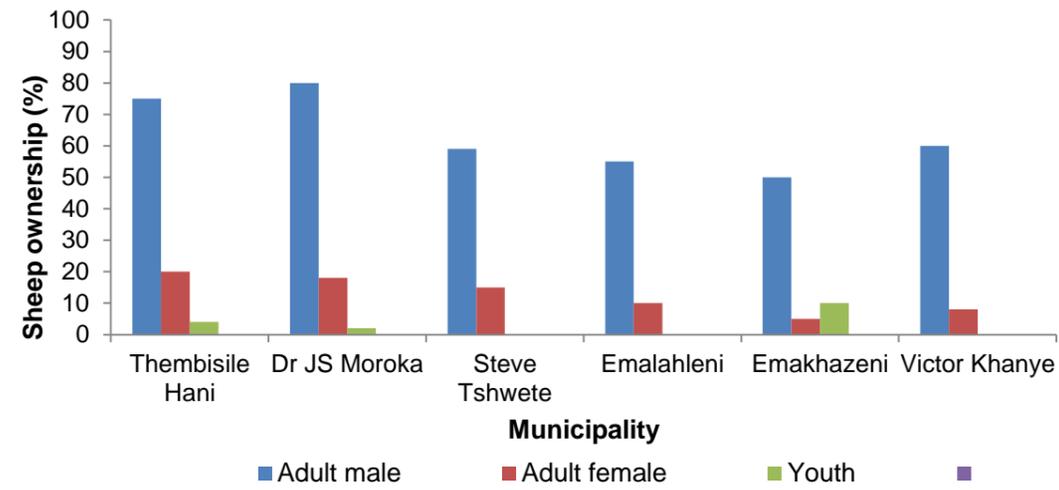
stratified random sampling procedure. A pretested structured questionnaire was administered to sheep farmers with the assistance of local agricultural officers.

Statistical Package for Social Science (SPSS, 2013) was used to analyse the data. Descriptive statistics (SURVEY MEANS and SURVEYFREQ PROCEDURES) generated were used to describe socio-economic characteristics of small scale sheep producers. Comparisons of herd sizes and flock composition between municipalities were done using analysis of variance (PROC GLM). Logistic regression (PROC LOGISTIC) was used to determine the odds ratio of socio-economic factors affecting sheep mortality and sheep sales on small scale sheep producers.

## RESULTS

The Majority of respondents (90 %) indicated that they raised sheep mainly to generate income. About 65 % of the participants had never attended school, and it was observed that they could not read or write. Adult males were highly involved in sheep rearing as compared to adult females and youth. In general, about 38% of respondents were unemployed across all municipalities. Farmers indicated that the natural veld was the major source of feed for their sheep. Sheep kept under extensive production system and it was observed that they were travelling long distance in search of fodder. Respondents that practiced semi-intensive and intensive systems had integration of animal and crop production. Most of respondents sourced their breeding stock from auctions and same flock. Only few (35%) of the respondents kept their sheep under well-constructed housing structures which protects sheep during bad weather. Indigenous breeds (94%) were the most used breed by respondents. Generally, sheep were sold at higher prices in Easters and festive seasons than in other seasons of the year. Disease was ranked high (48 %) by farmers as main causes of sheep mortality compared to starvation, stock theft, predation and accidents. Sheep housing, production system, availability of supplementary feed and accessibility veterinary and extension services showed to have impact on sheep mortality (Table 1), while gender, wealth status, sheep housing, availability of supplementary feed, accessibility of veterinary and extension services showed to have impact on sheep sales (Table 2).

**Figure 1:** Sheep ownership patterns and gender participation in different municipalities

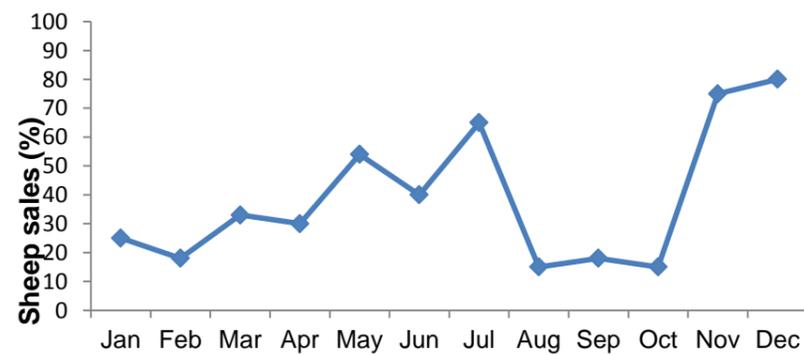


**Table 1:** Odds ratio estimates of household sheep mortality in different municipalities

Mortality predictor	Odds ratio	Lower CI	Upper CI
Age (youth vs adult)	0.263	0.065	1.072
Gender of household head (male vs female)	0.901	0.435	1.865
Wealth status (rich vs poor)	0.332	0.235	1.456
Sheep housing (open vs shaded)	1.662	0.517	5.345
Production system (extensive/semi-intensive vs intensive)	1.536	1.013	2.329
Availability of supplementary feed (no vs yes)	4.489	1.158	17.405
Accessibility of veterinary services and extension service (no vs yes)	1.747	0.856	3.565
Type of sheep breed owned (exotic vs indigenous)	0.361	0.104	1.251

**Table 2:** Odds ratio estimates of household sheep sales in different municipalities

Sales predictor	Odds ratio	Lower CI	Upper CI
Age (youth vs adult)	0.902	0.790	1.832
Gender of household head (male vs female)	1.143	0.910	1.402
Wealth status (rich vs poor)	2.012	0.171	2.594
Sheep housing (open vs shaded)	1.820	0.319	3.505
Availability of supplementary feed (no vs yes)	3.126	0.401	3.300
Accessibility of veterinary services and extension services (no vs yes)	2.139	1.452	3.305
Type of sheep breed owned (exotic vs indigenous)	0.069	0.210	5.464



**Season of sales. (fig 3)**

**Figure 2.** One of auction area where majority of small-scale sheep farmers sell their animals. High sales take place between May and July months, while sales reach peak during November and December months (Figure 3)

## CONCLUSIONS

Type of sheep housing, production method employed by the farmers, availability of supplementary feed and accessibility of veterinary and extension services were found to have high probabilities of influence on both sheep mortality and sales. Gender and wealth status of the farmer affected sheep sales. Diseases, starvation, stock theft, and predation and road side accidents are the major challenges faced by the small-scale sheep producers. Farmer's gender, age, education background, wealth status, income, production system, flock size, type of sheep breed owned, sheep housing, accessibility of veterinary and extension services, influence sheep production. To improve sheep production, farmers' socio-economic factors should be considered when planning strategies for sustainable sheep management programmes which will contribute in alleviating poverty on sheep producers.

## RECOMMENDATIONS

- Veterinary, extension and advisory services need to be strengthened at local level for easy access by sheep farmers for improved productivity.
  - Training programs such as farmer study groups, workshops, etc. for optimal sheep production should also be strengthened.
  - Farmers should be encouraged to keep records, tag their animals, report stock theft cases and construct sheep housing which can be able to protect sheep against predators and extreme weather conditions.
  - Government needs to find ways in developing easily accessible credit scheme to sheep farmers.
  - Farmers should be trained on all aspects of market such as quantity, quality and standard. In the absence of registered marketing agents, government together with its stakeholders and other NGO's should play a role in connecting sheep farmers with potential buyers.
  - Farmers should be encourage to avoid sourcing breeding stock with no records of health status as this spreads diseases from one flock to another easily.
- Farmers should be encouraged to form livestock cooperatives which give members easier access to essential inputs (feed, improved breeds, vaccines) and to credit, training, transportation and marketing of sheep products.
  - There is a need for farmers to supplement their flocks during dry periods when quality of natural pasture becomes poor.
  - Programmes which will encourage women and youth to participate in sheep farming should be initiated.