

Full Length Research Paper

Farmers' perception on sheep production constraints in the communal grazing areas of the Eastern Cape Province, South Africa

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The study was conducted to identify farmers' perception and ranking of the most important constraints to sheep production at Sinqumeni administrative area, in Ngcobo local municipality of the Eastern Cape Province, South Africa. Data was collected using semi-structured questionnaire. The results showed that 72.6% of the surveyed farmers were males and 62.5% of the farmers were between the ages of 52-80 years. The most important challenges of sheep production perceived by the farmers were disease and parasites (27%), shortage of feed (16.7%), lack of infrastructure (16%), organized market access (14.7%), lack of water availability (10.1%), high cost of drugs/vaccines (9.8%), stock theft (5.7%) respectively. Thus, there is a need to forge strategic partnership with various stakeholders to control the identified challenges through on-going training of farmers using a demonstration approach rather than an oral presentation, formation of cooperatives to minimise the cost of drugs; and conservation of feed and rain water harvesting in preparation for dry season can be a sustainable way of overcoming the constraints experienced by small-scale sheep producers.

Key words: Constraints, feed, disease, sheep, small-scale.

INTRODUCTION

Sheep farming is mainly subsistence and is characterized by low inputs in the Eastern Cape rural areas. Livestock production in the Eastern Cape Province (ECP), like in most developing countries, is two-dimensional and consists of communal and commercial livestock farming (Braker et al., 2002). The communal farming sector is dominated by resource poor farmers who are rural dwellers. In this sector, there is limited application of the recommended livestock management practices. This could be linked to the low literacy levels of farmers and

the history of livestock keeping practices by the livestock owners; whereas on the other hand, the commercial sector is made up of individual farmers on private property with farming done as a business and the application of best practices is practised in order to make profit. The distribution of grazing land is however skewed as the majority of the land is under the commercial farming sector as compared to the communal farming sector.

South Africa has estimated sheep population of 24,392

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million (National Livestock Statistics, 2012) and 29% of these are raised by communal farmers of the ECP and Free State (CAPEWOOLS South Africa, 2007). In South Africa, there are different breeds of sheep found widely distributed across different agro-ecological zones, where they provide income, quality food (meat) and fertilizer (Haenlein and Ramirez, 2007; Bayer et al., 2001), thus contributing to household livelihood, food security, poverty alleviation (Miao et al., 2005) and nutrition (FAO, 2009). Livestock is also a means of risk avoidance during crop failure and cultural functions during festivals (Kosgey et al., 2008). Although sheep farming is widely distributed in all provinces, the largest number is found in the ECP which is estimated to be 7.056 million (National Livestock Statistics, 2012). The productivity is low considering the large resource available and compared to the commercial sector. Communal sheep farming reflects a high level of mortality ($\pm 25\%$), a low reproduction rate ($\pm 56\%$), a low weaning percentage ($\pm 45\%$) and low turnover (Bembridge, 1989). Various studies indicated that seasonal variation in feed availability, poor management practices, diseases and parasites, stock theft, lack of water availability, poor genetic potential and ineffective marketing are the major causes of the low production in these areas (Kusina and Kusina, 1999; Ben and Smith, 2008; Nsoso and Madimabe, 2003; Karimuribo et al., 2011). These factors contribute to a very low off-take ($\pm 9.9\%$) and poor returns to the cash economy of the province.

Sheep have a great potential to contribute more to the livelihoods of the people in low-input, small-scale mixed crop livestock production systems (Kosgey and Okeyo, 2007). Increase in the current level of productivity of sheep is essential to meet the demands of the ever-increasing human population, to increase household income and to improve export earnings. However, in 2009 the National Department of Agriculture indicated that agriculture contributes around 6.5% to total export earnings.

There is limited knowledge available on the constraints faced by small-scale sheep producers. Therefore, this study was designed to identify the main constraints limiting sheep production in the communal areas of the ECP in order to suggest improvements strategies to policy makers.

MATERIALS AND METHODS

Study area

The study was conducted between July 2009 and September 2010 in Sinqumeni Administrative Area in Ngcobo Local Municipality which falls under Chris Hani District Municipality. Facilitation processes were followed in terms of meeting with farmers and community elders, local authorities and local extension officers. Sinqumeni is located 50 km North of Ngcobo town and 35 km East of Ugie town. Sinqumeni is situated within $31^{\circ} 12' 30''$ S longitude and $28^{\circ} 13' 45''$ E latitude. The mean annual rainfall was ± 620 mm.

The vegetation is classified as Drakensberg Foothill Moist Grassland (Mucina and Rutherford, 2006). The most common grass species is *Themeda triandra*.

Data collection

A semi-structured questionnaire was used to obtain the information. According to Nogantsi (2010), the size of the sample depends on many factors such as budget, administrative concern and time. A total of 62 informants (72.6% males and 27.4% females) were selected purposively with the assistance of extension officer and community elders and local authorities, based on their willingness to participate and have experience farming and own livestock. Prior to data collection the questionnaire was pre-tested. Each participant was separately interviewed in their vernacular language and later translated to English by the research team from Dohne Agricultural Development Institute. The questionnaire basically covered the household characteristics of sheep farmers, constraints that limited sheep production.

Statistical analyses

Data collected was captured on Excel and analysed using Statistical Package for Social Science (SPSS, 2000) to generate descriptive statistics.

RESULTS AND DISCUSSION

From this study, the mean age of respondents was 50.1 years (ranging from 20 to 85 years). The majority (62.5%) of respondents were adults within the age bracket of 52-80 years. Similar findings by Scholtz et al (2008) showed that rural migration of the youth in search for greener pastures contributed to the higher proportion of rural farmers who were 60 years. This was also observed by Katiyatiya et al. (2014) who interviewed farmers that were 51 years of age or older (>51). Farming is considered as an alternative for people retiring from their jobs and that the young and active people migrate to urban areas to seek better opportunities, are actively involved in other agricultural enterprises or do not consider farming as a potential business.

Men owned more livestock (72.6%) as compared to women (27.4%). This is in agreement with the findings of Mapiliyao et al. (2012) and Kunene and Fossey (2006) who concluded that livestock farming is a male dominated business. Similar findings were also observed in Nigeria and Tanzania by Kristjanson et al. (2010) and Covarrubias et al. (2012) where men dominated the livestock industry in rural areas. The lower proportion of female farmers could be due to the inability to get their own farmland as head of a family if they are not married. In addition to this, there are other responsibilities for women that may not be associated with livestock production such as household duties (Musemwa et al., 2010; Fayemi and Muchenje, 2013). This is in contrast to a previous study by Anaeto et al. (2009) where women owned more sheep (70%) than men (30%) in Ogun State, Nigeria. Similar to this, Modise (2004) reported that more

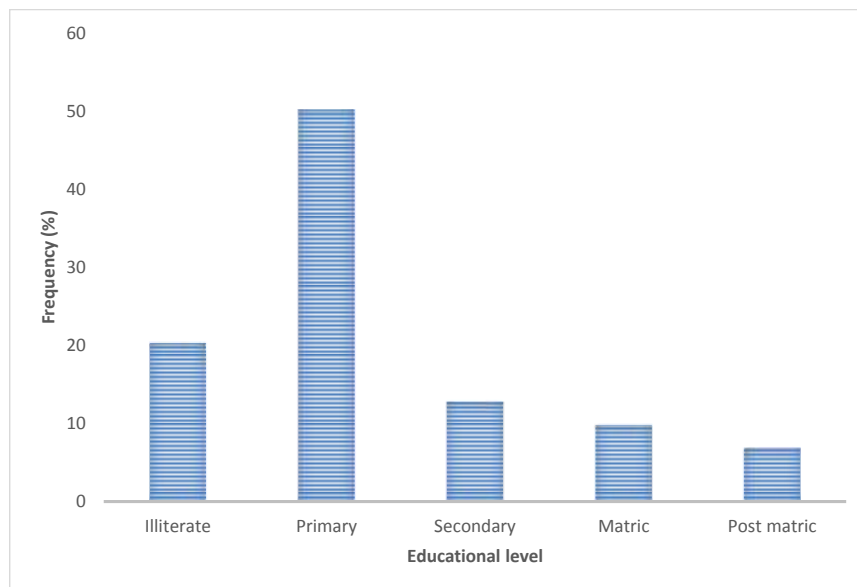


Figure 1. Educational level of the respondents.

Table 1. Demographic characteristics of respondents.

Gender	Age (years)		Household size	
	No.	%	Category	%
Male	45	72.6	<40	27.5
Female	17	27.4	41-60	42.5
			>61	30.0
			<5	32.5
			6-10	47.4
			>11	20.1

women (84%) participated in poultry farming than men. It was noted that in certain households when the husband passed away, women cannot take ownership of the sheep. The reasons could be due to social and cultural factors as well as a lack of capital.

The mean family size was 4.2 members/household. This size obtained in this survey was higher than the provincial and national average family size of 3.9 and 5.6 respectively (Census, 2011). This finding was similar to that reported by FAO (2010) where the average family size in Vietnam was between 4.0 and 5.2. In general, difference in family size may be attributed to the low level of awareness in family planning in the rural areas. The results also showed that 50.2, 12.8, 9.8, and 6.9% had primary, secondary, matric and post matric education, respectively, whereas the remaining 20.3% of the respondents had no formal education (Figure 1). The high proportion of farmers having primary education is a good indicator of the potential of these farmers to be exposed to new and more advanced management and production programs; for example, record keeping which is of paramount importance for decision making in farming industry.

Farmers perceived constraints associated with sheep production in the study area

The perceptions of farmers on the constraints associated with sheep production are shown in Table 1. The results show that high prevalence of diseases and parasites (27%), shortage of feed (16.7%), lack of infrastructure (16%), organized market access (14.7%), lack of water availability (10.1%), high cost of drugs/vaccines (9.8%) and stock theft (5.7%) were among the major challenges facing sheep farmers in the study area (Table 2).

Disease and parasite

High prevalence of diseases and parasites is a serious constraint on small ruminant production particularly in more humid areas. High incident of diseases may cause high mortality among lambs, kids and results to low reproduction performance. Farmers ranked diseases and parasites as major constraints to sheep production in the study area. The reasons for high prevalence of diseases and parasites might be due to high cost of drugs, long

Table 2. Major constraints to small-scale sheep production in Sinqumeni.

Constraints	Sinqumeni (n= 62)		
	Frequency	Ranking	%
Shortage of feed	32	4	14.2
Lack of water availability	23	5	10.2
Diseases and parasites	62	1	27.6
Organized market access	40	3	17.8
Stock theft	11	7	4.9
Lack of infrastructure	43	2	19.1
High cost of drugs/vaccines	14	6	6.2
Total	225		100

distance to health care centres and visibility of animal health advisors. These findings are in agreement with Githiori et al. (2006) and Mapiliyao et al. (2012) in sheep. Contrary to our findings, a study conducted by Belay et al. (2013) at Ginchi Watershed area ranked diseases and parasite as second.

Shortage of feed

In most communal grazing areas, natural veld is the major source of feed for livestock (Mapiye et al., 2009). Report from RMRD SA (2012) confirmed that 70% of agricultural land in South Africa is suitable only for extensive livestock production. Livestock on communal grazing areas depend on low quality roughages during prolonged dry seasons for their nutrient requirements (Becholie et al., 2005). Severe shortage of feed worsened during winter due to seasonal nature of rainfall which leads to fluctuations in forage quantity and quality. Livestock in communal grazing areas is characterized by a low reproductive, high mortality rate, low weaning percentage and severe weight loss (Bembridge, 1989; Devendra, 1990). Shortage of feed was ranked the second; this can be attributed by high livestock number, prolonged drought seasons and construction of homestead in grazing areas due to high human population. The findings confirm the assertions made by Mutibvu et al. (2012), Ben and Smith (2008) and Harding et al. (2007) that the major problems of sheep and cattle rearing include among other things, the shortage of feed. Study conducted by Mapiliyao et al. (2012) at Sompondo and Gaga ranked shortage of feed as the fourth and seventh constraint, respectively.

Lack of infrastructure and market access

Infrastructure is viewed as one of the key pillars for enterprise profitability. Lack of infrastructure was mentioned as third constraints whereas market access is the fourth constraint. There is link between the two

constraints especially in rural areas where there are no access roads and marketing facilities. The results from the study concurs with the findings of Makhura (2001) and D'Hease and Kirsten (2003) who reported that the smallholder farmers have been neglected in terms of infrastructure support by past government. This conforms to findings by NERPO (2004), Wani et al. (2009), Agholor (2013), Sabapara et al. (2014) and Fikru and Omer (2015), who stated that unavailability of marketing infrastructure facilities such as sale pens, loading, off-loading ramps and access roads were the major constraints to small-scale farmers marketing of livestock in various parts of the world. Lack of infrastructure resulting to poor market access in rural areas will lower the income, increase poverty and hunger. Musemwa et al. (2008) affirmed that marketing constraints such as poor availability of infrastructure likely affects small-scale farmers more than production challenges.

Shortage/lack of water

The main sources of water in most communal grazing areas are rivers and dams. Farmers ranked shortage of water as fifth constraints. Shortage of water might be due to high stock numbers, expansion of irrigated land for crops, human consumption and household use along with scarcity of rain due to climate change. Similar studies conducted by Charlotte and Manderson (1998) as well as Lukuyu et al. (2009) reported that lack of water is a major problem which results in reduction of feed intake, imposing a limit on milk yield and growth rate.

High cost of drugs/vaccines

The sixth constraint raised by farmers was high cost of drugs. High cost of drugs/vaccines are the major causes for high mortality rate among sheep producers under small-scale production system. Study conducted by Maingi and Njoroge (2010) and Aphunu et al. (2011) are in agreement where high cost of drugs was among the

major constraints that hampers livestock production.

Stock theft

Out of all the respondents, 5.5% ranked stock theft as a key challenge for sheep production. High stock theft may be caused by high unemployment rate and quick cash yield. This is similar to the findings of Kabore et al. (2011) and Mashala (2013) for livestock.

Conclusion

Results of the study show that diseases, shortage of feed, lack of infrastructure, organized market access, lack of water availability, high cost of drugs/vaccines, stock theft, visibility of animal health technicians and extension officers, selection of adapted animals and ewe to ram ratio were the major constraints limiting sheep production. Based on the results of this study, the following recommendations can be made for improving small-scale sheep production in the communal areas. Forging a strategic partnership with various stakeholders to control the identified challenges through on-going training of farmers using a demonstration approach rather than an oral presentation, formation of cooperatives to minimise the cost of drugs, conservation of feed, planting of leguminous and rain water harvesting in preparation for dry season can be a sustainable way of overcoming the constraints experienced by small-scale sheep producers.

CONFLICT OF INTERESTS

The authors have not declared any conflict of interests.

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