

A survey of small-scale cattle farming systems in the North West Province of South Africa

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Abstract

A questionnaire-based survey was conducted among a purposive sample of 60 small-scale cattle farmers in the Mopeane Rustenburg district, all of whom owned five or more head of cattle. Results showed that small-scale cattle farming is a part-time activity for most farmers in this district, and a way of investing or saving money in a form that is easily converted to cash when needed. This activity also provides households with a source of fresh milk. Contrary to the situation in most other Southern African regions, social status and lobola (bridal dowry) did not constitute the most important reasons for farming with cattle. The poor economic return of these small-scale cattle farming activities and the potential environmental degradation associated with overstocking poses a serious risk to the long-term sustainability of such farming systems.

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Introduction

Livestock production is a major component of Southern African rural agriculture. Livestock products (meat and milk) provide food for home consumption and are sources of income (Rocha *et al.*, 1991). For many small-scale farmers, livestock also represent a form of capital that is easily converted into cash (Rocha *et al.*, 1991; Nell, 1998; Moorosi, 1999), and provide draught power and manure. The productivity of these systems is generally relatively low (Muchena *et al.*, 1997; Spio, 1997). Data on the socio-economic and management characteristics of these farming systems is essential in order to plan and implement effective development strategies. The aim of this study was to provide such data for cattle farming systems in the Mopeane-Rustenburg District of the North West Province of South Africa.

Materials and methods

Sixty small-scale cattle farming households were selected for this study out of a total of 120 households in the Mopeane-Rustenburg district, which owned five or more head of cattle. These farmers shared a communal grazing area of 250 ha. The interviews were conducted at the farmer's house by one of the authors with the assistance of a local extension officer. The survey collected information on socio-economic characteristics of farmers, land tenure systems, cattle production systems, as well as access to farming support services and infrastructure. An inventory of agricultural resources, farming infrastructure and supporting services was also made using information collected by the North West Province Department of Agriculture and the local extension services. The study area is located at 25°14' S, 27°14' E and at an altitude of 1120 m. The mean annual precipitation is 680 mm, 85% of which occurs during summer (October to March). The data were analysed using linear procedures of SAS (1990).

Results and discussion

The number of cattle owned by the households varied from five to 149 and had a normal distribution with a mean of 29 head of cattle per household. This figure is higher than that reported for other areas of South Africa. Moorosi (1999) reported that the average herd sizes in Thaba Nchu and Botshabelo were 10.8 and 7.2 respectively. Nthakeni (1996) reported a mean of eight head of cattle per farmer in Venda, while Bembridge (1984) estimated the mean herd size in the Transkei to be six cattle. The herd structure and numbers of cattle in the Mopeane-Rustenburg area are presented in Table 1.

Table 1 Composition of cattle herds owned by small-scale farmers in the Mopeane-Rustenburg District

Class	Number	LSU*	% of total
Heifer calves (< 1 year)	307	163	13.4
Replacement heifers (1-3 years)	783	878	34.2
Young cows (3-4 years)	443	501	19.3
Mature cows (4-9 years)	551	700	24.0
Old cows (> 9 years)	10	16	0.5
Bull calves (< 1 year)	110	70	4.8
Young bulls (1-3 years)	57	62	2.5
Mature bulls (> 3 years)	30	41	1.3
Oxen	0	0	0
Total	2291	2431	100

*LSU - Large Stock Unit equivalents estimated according to Meissner (1982)

Breeding females constituted the largest group of the herd, which is in agreement with results of other studies in South Africa (Seobi, 1980; Dreyer *et al.*, 1999; Moorosi, 1999; Sieff, 1999). Replacement heifers constituted a large proportion of the herd (37.4% of females and 34.2% of the total herd), while young bulls constituted only 7.3% of the total herd. This suggests that young bulls are either sold to generate cash income or slaughtered for home consumption. Not every farmer kept mature bulls, which indicates that communal bulls are used, a practice also reported by other authors in Southern Africa (Rocha *et al.*, 1991; Moorosi, 1999; Sieff, 1999). The ratio of bulls to cows was 1:33. Nthakeni (1996) reported a higher percentage of bulls in Venda (17.9%). The absence of oxen is consistent with the fact that there is very little arable land in the district. In other developing areas of South Africa, the use of oxen for draught purposes is one of the major reasons for cattle farming (Lawry, 1986; Blench, 1987; Swallow, 1987; Starkey, 1990; Rocha *et al.*, 1991; Muchena *et al.* 1997). Moorosi (1999) reported similar findings to this study for Botshabelo; however, at Thaba Nchu, 11 km from the site of this survey, small-scale cattle farmers do have access to arable land and oxen comprise about 11% of the total cattle herd. The stocking rate was estimated to be 9.7 LSU/ha, which is 48 times higher than the recommended stocking rate of 0.2 LSU/ha (Tainton, 1999). Overstocking has a negative impact on pasture and soil resources and represents a potential threat to the sustainability of these farming systems. Overstocking is common in other small-scale cattle farming communities in South Africa (De Villiers, 1998; Dreyer *et al.*, 1999; Moorosi, 1999).

Despite the fact that 91% of the farmers milked their cows for home consumption, none of the farmers indicated that this was their main reason for farming with cattle (Figure 1). Cash-related reasons were cited by 91% of farmers as the main motivation for farming with cattle. Forty-six percent cited cash as the main reason, 17% kept cattle as source of cash for emergencies and 28% kept cattle for financial security. Prestige and "lobola" (bridal dowry) were cited by only 5% and 4% respectively.

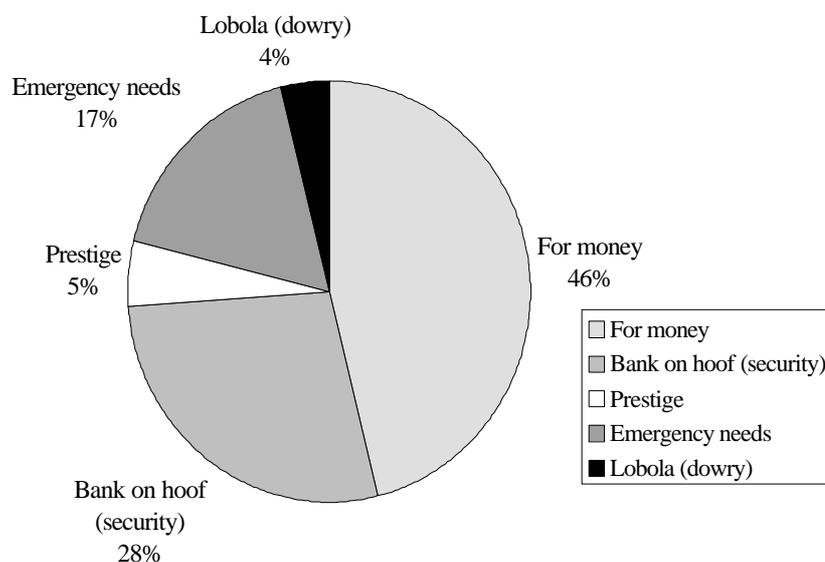


Figure 1 Main reasons given for farming with cattle

These results indicate that small-scale farmers in this region are more commercially orientated than others in Southern Africa, where home consumption, prestige and lobola are given as more important reasons for farming with cattle than are cash-related reasons (Rocha *et al.*, 1991). These results confirm those of Rocha *et al.* (1991), Wilson (1995), Nell (1998) and Moorosi (1999), who reported that livestock, especially cattle and their products, provide a cash income and financial security for many Southern African small-scale farmers. Most income was derived from sources that were not related to farm activities. Only 23% of respondents were full-time farmers and 77% were also engaged in various other economic activities. Forty five percent of the respondents worked in industry (mainly mining), 15% were self-employed (mainly in the transport business), 13% worked on commercial farms, and 4 % were public servants (police and schools).

The cash income from cattle farming activities was low, with 75.4% of all farmers earning an income of R 1000 or less per year from their cattle farming activities. Only 14% of these small-scale cattle farmers earned R 3000 or more per month. Analysis of the total income per household showed that only 29% of the cattle farming households had an annual income of R 3 000 or more, whilst 3.6% earned between R 2 000 and R 2500 per month. Most farmers (41.8%) had monthly incomes of R 1 000-1 999, 23.6% received between R 500 and R 1 999, and 2% had a total annual income of R 499 or less (Figure 2).

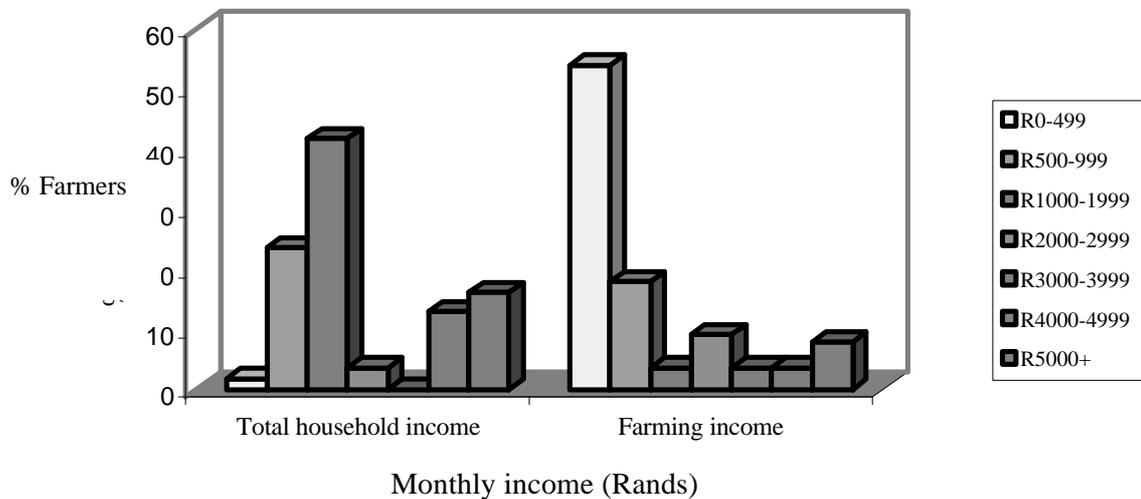


Figure 2 Total household and farming income

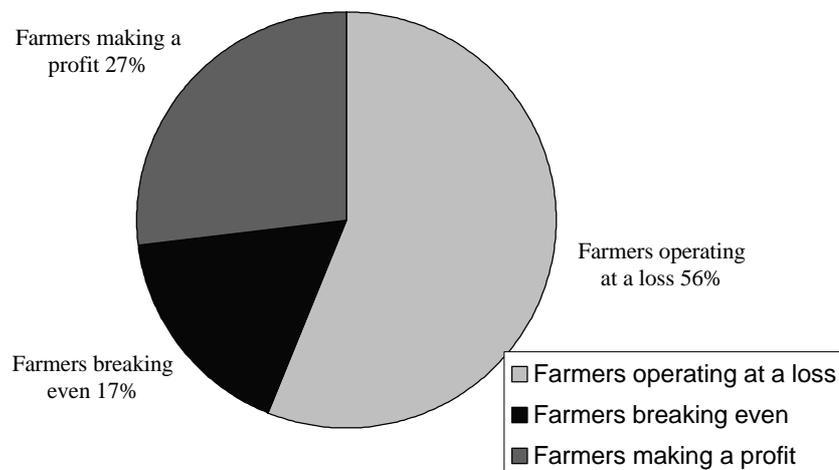


Figure 3 Profit/Loss analysis of annual income derived from small-scale cattle farming activities in Mopeane-Rustenburg

There was a positive correlation ($r = 0.58$; $P < 0.05$) between the level of income from sources other than farming and the number of cattle owned. It appears that it is easier for rural people to invest in agriculture if they have access to non-farm income, which enables them to deal with the risks inherent in agriculture. These findings differ from those reported for other regions of Southern Africa, in which small-scale cattle farming is often the sole source of income. In these reports, small-scale livestock farming is generally a full-time activity practised mainly at a subsistence level (Rocha *et al.*, 1991, Muchena *et al.*, 1997; Nell, 1998; Moorosi, 1999). The role of cattle farming as an investment is evident from Figure 3. Only 27% of farmers made a small profit (R 300 to R 5 150 per annum) from their cattle farming activity. Only one farmer made a large profit (R 19 050 per annum) from his cattle enterprise. Seventeen percent of cattle farmers did not spend money on their livestock, nor did they generate an income by selling animals. In over half (56%) of all cases the cattle enterprise ran at a loss; this was estimated to vary from R 120/annum to R 20 600/annum.

Hired labour was estimated to account for over 70% of all farming cost incurred and impacted heavily on farm profitability. Income from non-farm sources enables these farmers to meet the cost of hired labour. In operating at a loss, farmers can only be sustained in the long term by external sources of income that are invested or saved in a way that is easily converted into cash when needed.

The extreme overstocking rate of this communal grazing area has the potential to lead to the ecological degradation of the natural pasture resource base. The overall economic impact of maintaining large herds of cattle erodes its benefits and compromises the long-term sustainability of small-scale cattle farming systems in the Mopeane-Rustenburg area.

Conclusions

It was concluded that small-scale cattle farming activities in Mopeane-Rustenburg are for most farmers a part-time activity and a way of investing or saving money earned from non-farming activities. Small-scale farming in other regions of Southern Africa is usually a full-time activity performed at a subsistence level for home consumption. This study has demonstrated the need to characterise each small-scale rural farming system prior to any intervention, as the general perception that these farming systems are similar is incorrect.

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