S.Afr. Tydskr. Landbouvoorl./S. Afr. J. Agric. Ext., Jordaan
Vol. 40, 2012: 48 - 57
ISSN 0301-603X

AN ANALYSIS OF THE MNGCUNUBE "*HANDS-ON*" MENTORSHIP PROGRAM FOR SMALL-SCALE STOCK FARMERS IN THE EASTERN CAPE, SOUTH AFRICA

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Key words: Mentorship program, small-scale farmers

ABSTRACT

The Elundini program included small-scale livestock farmers in the Eastern Cape, South Africa. The program's data analyses and the impact on farmers and the economy were evaluated. Since program inception, sheep mortality decreased from >20% to 3%. Lamb weaning rates were approximately one lamb for every two ewes (50%). Farmers' annual income increased from R650.00 to R20,956.00 (R1.00 ≈ $0.15) with a total net gain of >R56 million for the region. Strict mentor management principles and payment for services were fundamental to the program's success. The impact of the program was immediately apparent and farmers were willing to pay for mentorship and treatments, provided they experience the benefits.

1. INTRODUCTION

Experts in the field of extension all acknowledge the importance of experienced commercial farmers mentoring emerging farmers. Standard Bank South Africa, has made R500million (R1.00 ≈ $0.15) available for a mentorship program to establish emerging black farmers in Agriculture (Blaine, 2010).

Although there are a number of mentoring programs in the United States and other countries, there are not many that have a proactive mentoring system in place. Some extension programs mention the importance of mentoring, and some attempt to include mentoring as part of extension programs, but little evidence of a focus on mentoring skills itself is evident. Programs that invest in mentoring skills include: The New England Small Farm Institute (New England Small Farm Institute, 2009), Farm Beginnings Land Stewardship Project (Farm Beginnings Land Stewardship Project, 2009), Agricultural Development Programs (Wisconsin Department of Agriculture, 2009) and Pennsylvania Farm Link (Pennsylvania Department of Agriculture, 2009).

The challenge with mentoring, however, is to find experienced persons with a developmental approach that are willing to take inexperienced farmers under their wings.

The Mngcunube development program has created a "*hands-on*" approach that is widely recognized for its immediate financial benefits to the farmers. Mngcunube relies on experienced mentors to assist in identifying full value in existing skills, assets and technologies, and in promoting and increasing farmers' profits through the application of basic stock management principles. Not only has this program succeeded in the transfer of knowledge, but availability and affordability of resources such as livestock medicine has been brought within the reach of even the smallest farmer (Mngcunube Development, 2008).

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1.1 Program background

The Elundini livestock improvement program included livestock owners in 80 villages of the Elundini Local Municipality in the Eastern Cape, South Africa. The design of the program was based on the experience gained by Mngcunube Development and related livestock work in communal areas of the Eastern Cape and Lesotho (Jordaan, 2004; Kew, 2008).

The program was financed through a public – private partnership between the Ukhahlamba District Municipality and the Gold Fields Foundation, represented by Teba Development (R3 million) and R4.2 million from the Thina Sinako Provincial Local Economic Development Support Programme (Kew, 2010). The program formally commenced on 1 March 2007 for a period of 18 months, but was subsequently lengthened owing to the success of the program.

1.2 Program operations

The livestock program operated on a cycle of village visits at regular intervals guided by seasonal animal health needs. The program also provided support to farmers in selecting and buying improved quality rams and with information and farmers' days. Participation was voluntary. All goods like livestock medicines and feed supplements were paid for by the farmers prior to treatment of their stock.

The livestock program consisted of the following program-based personnel: a manager, an administrator, three farmer mentors, two locally employed enumerators and six village contact people. Mngcunube also provided program support in the form of program management, financial services, data base design, operation, general administration and monitoring and evaluation. All personnel were fluent in the local language, isiXhosa, and at least one other South African official language.

The program used experienced farmers as mentors, in line with international practice on farmer-to-farmer extension. The routine of regular visits that took place without fail on the agreed dates and times, built a climate of trust in which communication and learning was promoted.

The mentors worked with locally employed enumerators and village representatives on the village visits. The focus areas of activity were guided by a combination of farmer demands, and where applicable, requests from community leaders. The village contact person, nominated by the farmers, helped to ensure that the logistics of visits were sound and the visits effective. The enumerators were responsible for record keeping, filling in farmers' cards, receiving payments and giving change. From an early stage the village contact people were supported to start with small businesses in supplying animal medicines and other relevant products to farmers. Given that access to animal medicines had the single biggest impact on the improvement and growth in livestock, this would serve as the foundation for sustaining the effects of the program after program closure.

2 DATA COLLECTION

Data management included mentors, enumerators, administrators and a data analysis specialist.

Data was captured directly from individual farmers who brought their stock to the village at a pre-designated time and date. The mentor and the farmer inspected the stock, reviewed the

available treatments, and jointly decided on the appropriate treatment. This in itself was an excellent opportunity for knowledge transfer since the mentor shared and discussed his/her experience with the farmer. The farmer was informed about treatment costs and he/she had to pay the money to the enumerator prior to any supply of treatment (a standard rate of R1.00 per SSU[16] was charged). Enumerators were carefully selected and trained to ensure proper data capturing. Care was taken to ensure that enumerators were literate and resided in or near the villages they were working.

Enumerators captured all data on pre-printed sheets. The main challenge for data gathering and analyses was the determination of reliable base line data. For that reason information was recorded in two sections. The first section included information of the 12 months prior to the first farmer visit. During the first visit, farmers were requested to provide information of the previous 12 months regarding the number of ewes, wethers, lambs born, adult sheep mortality, lamb mortality, sheep sold and sheep slaughtered.

The second section included the monthly information from the first farmer visit. Data captured at each visit included number of ewes, wethers, new born lambs, lambs castrated, animals sold, adult sheep mortality and lamb mortality. Additional data captured included village, date of treatment, mentor's name, field worker's name, diseases/pests treated, drugs/medicines used, name of farmer and farmer's program code.

The mentor delivered the completed field forms to the administrator who was responsible for entering the data on a daily basis. The administrator also checked and balanced the cash paid by the farmers against the field form and signed it off. The administrative supervisor then sent the data to a statistician who was responsible for analyses and providing feedback to the program management team.

3 RESEARCH BACKGROUND AND OBJECTIVES

The Elundini program was originally not designed as a research project, but focused on improving the efficiency and profitability of small stock farmers. The program managers, however, applied the principle of *"if you can't measure, you can't manage"* and as a result careful data were kept from the start of the program. Results obtained through the interventions of this program were dramatic and Mngcunube requested the scientific evaluation and analyses of the data to support their claim to success.

Therefore, the objectives of this research were to:

- evaluate the reliability of data captured and analyzed at program level and to propose improvements
- determine the production benefits and financial impact of the program
- determine the cost efficiency and success of the program.

4 DATA EVALUATION RESULTS

The large pool of data increased the accuracy of the analyses. Although the base line data might be a source of critique, it could be used as a basis when evaluating the efficacy of the data captured and analyzed in the Elundini program.

[16] SSU means small stock equivalent, where sheep and goats are one unit each and cattle are counted as six.

The cumulative number of farmer contacts since March 2007 was 29,803 with 287,664 sheep, 38,430 goats, 12,727 cattle and an unknown number of horses treated. The number of farmers participating in the program was 2,638 and the maximum number of farmers helped during one month (April 2008) was 1,003. On average, 536 individual farmers were helped per month with 11,982 ewes, 3,940 wethers, 2,953 lambs, 2,011 goats, 349 kids and 764 cattle treated. Mentors mentioned that farmers shared their positive experiences with others, thus increasing the number of farmers attending the program. Even though information on sheep, goats and cattle were recorded, only the results of sheep will subsequently be discussed in this paper.

One of the challenges faced with the available data was to calculate the average flock size per farmer since farmers did not bring all their animals for treatment. A random sample of 200 farmers was selected and their data were analyzed individually. The analyses of the mean number of ewes and wethers per farmer per month are given in Figures 1 and 2, respectively (x axis represents number of animals and y axis represents number of farmers). The analyses of the maximum number of ewes and wethers per farmer per month are given in Figures 3 and 4, respectively.

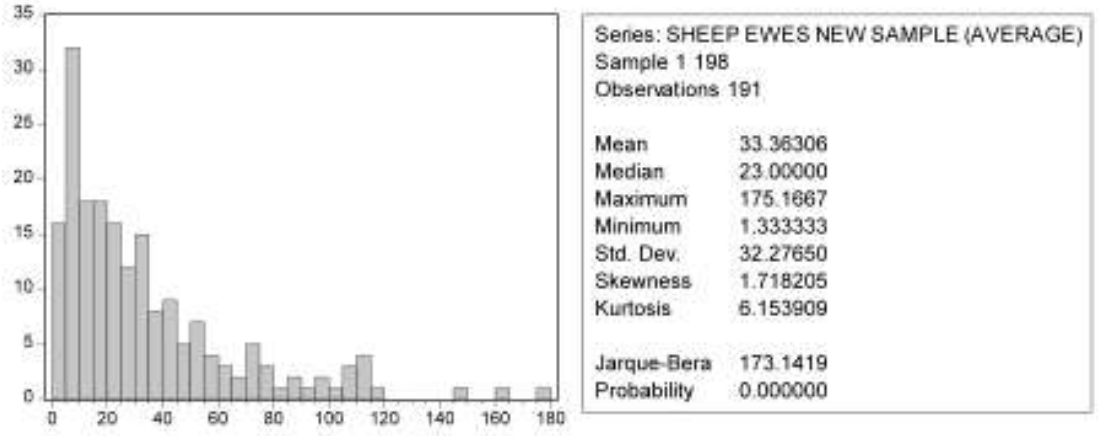

Figure 1 Mean number of ewes treated (x axis) per farmer (y axis)

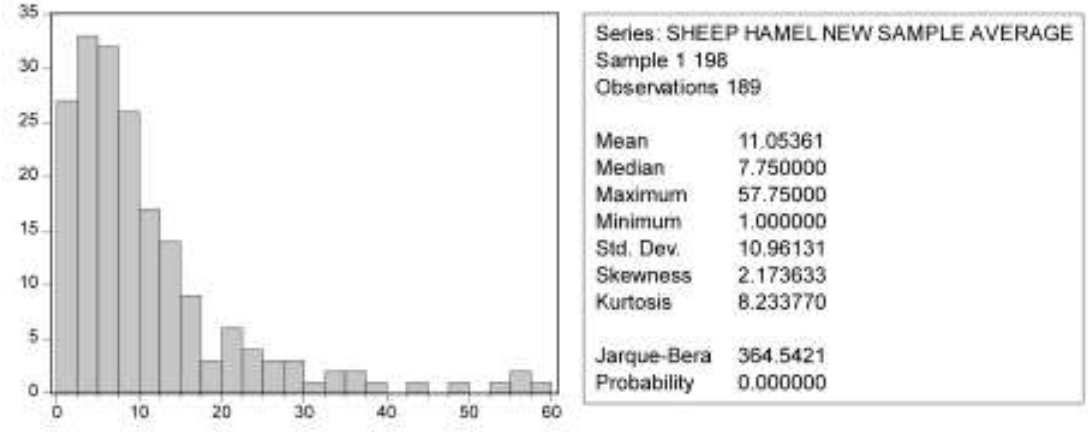

Figure 2 Mean number of wethers treated (x axis) per farmer (y axis)

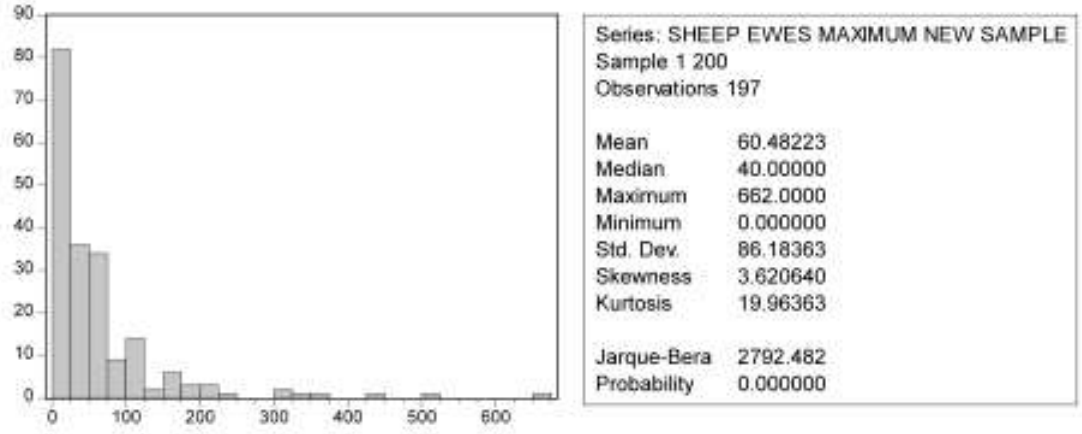

Figure 3 Maximum number of ewes treated (x axis) per farmer (y axis)

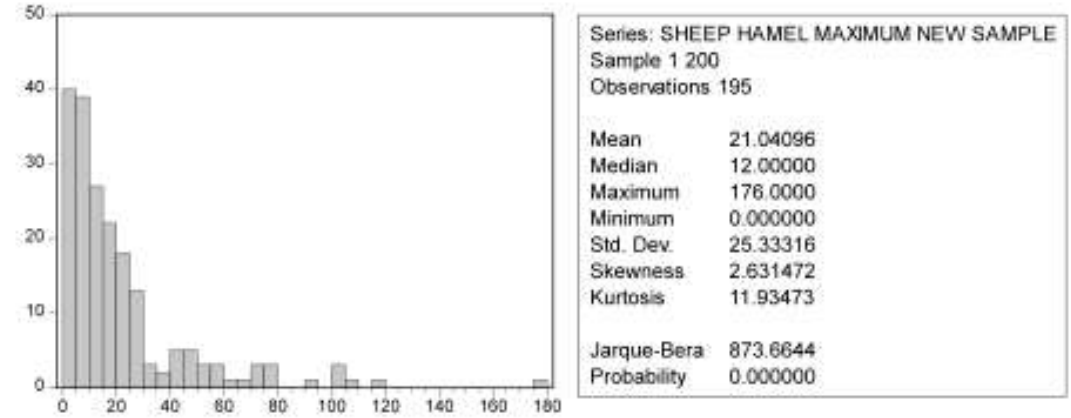

Figure 4 Maximum number of wethers treated (x axis) per farmer (y axis)

The mean number (median in brackets) of ewes and wethers treated per farmer (n=200) each month was 33 (23) and 11 (7), respectively (Figures 1 and 2). When the maximum number of treated sheep and wethers were considered per farmer (n=200) each month, the mean (median) was 60 (40) and 21 (12), respectively (Figures 3 and 4). One can assume that the actual number of sheep owned by farmers equals the maximum number brought for treatment.

The monthly data was for the average and maximum number of sheep and wethers were highly skewed (Figures 1 to 4) due the 80:20 principle. This indicated that 20% of the farmers owned 80% of the sheep; a principle widely acknowledged as a production pattern in commercial agriculture and also evidenced here amongst small-scale communal farmers.

The average number of sheep each farmer brought for treatment increased from as few as 13 (maximum 31) during the first 6 months to 36 (maximum 42) sixteen months later (Figure 5). The most likely explanation is that farmers increased the quantity of their stock since the data also showed that they did not sell more or use more animals for own consumption. This may create future pressure on available land, which will lead to overgrazing.

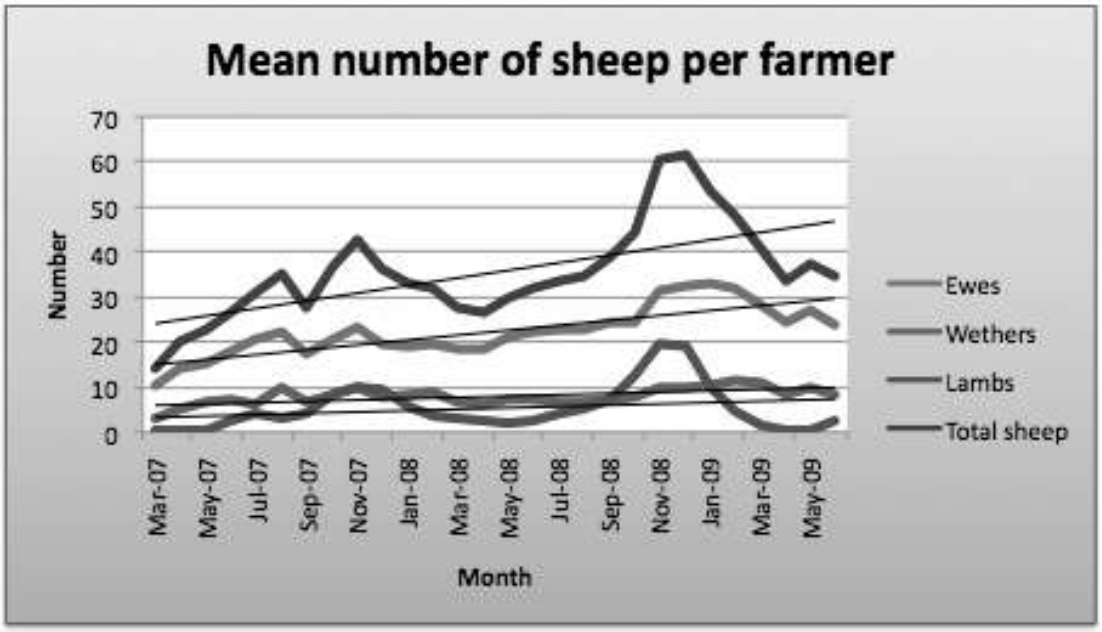

Figure 5 Mean number of sheep per farmer

4.1 Production benefits for farmers

The two most important indicators of the program's success were mortality and lambing rates; this was reflected in the financial results for each farmer and was used for calculating the program's financial impact in the absence of actual financial data. The monthly mortality rate of adult sheep decreased from 1.62% per month (>20% per annum) to as little as <0.05% per month (<3% per annum) for farmers who participated in the program (Figure 6). The base line of >20% mortality rate per annum is conservative since farmers in similar circumstances in Lesotho experience mortalities in excess of 30% per annum (Jordaan, 2004; Kew, 2008).

Figure 6 Monthly mortality rate for sheep

The mortality rate for lambs decreased from more than 40 out of every 100 (40%) lambs to less than 5% after program implementation. It should be noted that the actual number of lambs born were not captured and the lambs that died from birth to date of first visit were not

recorded; one can expect that mortality is highest during the first few weeks after birth which is an indication that actual mortalities were much higher than 40%.

The actual lambing rate could not be calculated accurately due to the lack of data regarding actual number of lambs born, but the number of lambs per number of ewes treated could be used as an indicator for success. An increase from 48% (48 lambs per 100 ewes) to 63% was achieved during peak lambing season after only one year; an increase of 15 lambs for every 100 ewes. This represents the peak lambing months of September, October and November. Farmers usually brought young lambs for treatment one month after birth. The recorded numbers in Figure 7 represents the actual number of lambs treated in relation to the actual number of ewes treated during a specific month.

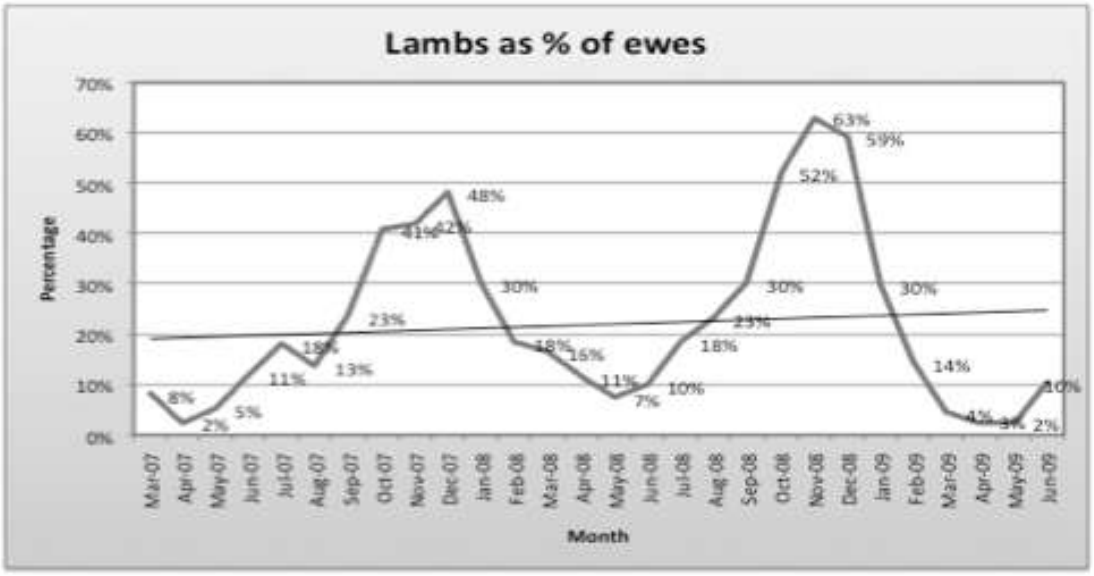

Figure 7 Lambs as percentage of ewes

During September 2007 to December 2007, 14,663 ewes and 5,543 lambs (38% lambs as % of ewes) were treated, compared to 37,343 ewes and 19,187 lambs (51% lambs as % of ewes) for the same period during 2008. An increase of 13 lambs for every 100 ewes after the first year was thus recorded.

4.2 Financial implications for farmers

The combination of lower mortality rates and more lambs resulted in a dramatic increase in profitability for farmers. Actual financial data were not available since the small scale farmers in this region do not keep any financial records. A financial forecasting model was therefore developed to compare income prior to, and after mentoring. The only real challenge for the robustness of this financial model was the base line data for lambs born and actual lamb mortality since the mortality rate of lambs immediately after birth was not available.

The following variables were used in the financial modelling:

- Average number of ewes and wethers per farmer: 60 ewes and 21 wethers (project data)

- Actual number of ewes and wethers treated: 18 900 ewes and 6 615 wethers (project data)
- Base line mortality rate for adult sheep: 20% (project data provided by farmers)
- Mortality rate for adult sheep after program implementation: 2.4% (actual project data)
- Base line lambing rate: 38% (actual project data implies 38%, but number of lambs born and died during first month not captured; adjustment recommended by farmers)
- Base line mortality for lambs: 40% (farmers provided data during first visit)
- Average auction price for adult sheep in region R650.00[17] and R450.00[18] for lambs.
- Other constants such as income from wool not included in calculations

The results of the financial modelling are illustrated in Table 1.

Table 1 Summary of cost benefit analysis

	Farmer		Region	
	Base line	Project	Base line	Project
Number of wethers	10	21	32280	67788
Number of ewes	30	60	96840	193680
Lambs/100 ewes	48%	63%	48%	63%
New lambs	14	38	46483	122018
Mortality rate adult sheep	20%	3%	20%	3%
Mortality rate lambs	40%	5%	40%	5%
Lambs died	6	2	18593	6101
Progeny	9	36	27890	115917
Adult sheep died	8	2.43	25824	7844
Lambs to replace died adult sheep	8	2	25824	7844
Surplus available	1	33	2066	108073
Ewes replaced %	20%	20%	20%	20%
Adult sheep replacing	1	7	413	21615
Ewes and wethers for sale	1	7	413	21615
Lambs available for sales		27	1653	86459
Price per ewe or wether	R650	R650	R650	R650
Price per weaned lamb	R450	R450	R450	R450
Cost per sheep		R9.07		R9.07
Potential gross income	R650	R21,691	R1,342,848	R70,247,736
Total cost	R0	R735	R0	R2,371,515
Net income	R650	R20,956	R1,342,848	R67,876,221

The financial model illustrated in Table 1 shows that farmers only had approximately 1 sheep per annum available for own use or sales, compared to 7 adult sheep and 27 lambs per farmer after mentoring. Some farmers confirmed the data by mentioning that they previously had no available surplus animals. The potential average income for a farmer increased from R650.00 to R20,956.00 per annum. The potential net income for the region increased from R1.34 million to R56.7 million without taking into consideration the downstream and upstream economic impact.

5 CONCLUSION AND RECOMMENDATIONS

The strict management principles, discipline from mentoring staff and the principle to pay for services were fundamental to the success of the program. The mentors kept their

[17] 2009 prices
[18] 2009 prices

appointments and promises diligently and this created trust amongst the farmers. The mentors' knowledge, skills and positive attitude towards the farmers were equally important.

The impact of the program was immediately apparent to the farmers because there was a reduction in livestock mortalities and an increase in weaning percentage. Farmers were therefore willing to pay for treatments and shared their positive experiences with others. New farmers were attracted by *"word of mouth"*.

The financial impact of the program was spectacular with an increase in net profit from R650.00 to R20,956.00 per farmer per annum. The positive net financial impact in the region added up to >R56 million, excluding the downstream and upstream economic effects. Additionally, village contact people benefitted financially as they created alternative entrepreneurship opportunities by establishing their own outlets for services and medicine sales. This subsequently contributed toward the sustainability of the program.

Extension services and mentor programs in South Africa can apply the following good practice from the Elundini livestock improvement program:

- Use experienced and trusted mentors
- Measure what is done through detailed data capturing
- Build trust through reliable services (keep promises and appointments)
- Farmers are willing to pay for services if they experience positive results

Some farmers may allow stock numbers to increase without selling the surplus stock. This may put increased pressure on the available grazing. The mentors should therefore carefully monitor stock numbers and grazing capacity and also include elements of veldt management into their training program.

The principle of free extension even to small-scale farmers should be re-visited. Successful commercial farmers already pay for professional advice (van Schalkwyk, 2010); it might be more efficient to provide paid extension with good results, rather than free extension with inexperienced and unmotivated extension personnel with no visible results.

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