

AN EVALUATION OF THE SUSTAINABILITY OF BEEF PRODUCTION IN THE COMMERCIAL SECTOR OF THE OKAHANDJA REGION

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INTRODUCTION

Livestock production in Namibia has been and for many decades will be one of the most important economical and social activities for most Namibians. In this country more than two thirds of the people directly or indirectly depend on livestock-based activities.

The productivity and stability of any beef production system is influenced by the potential of the abiotic and biotic components as well as the manager's ability to determine external negative forces and to reduce the risk of production. Any resource losses have to be reduced and the output of the beef production system has to be economically viable. The production of beef in Namibia is however dependant on a low and unpredictable rainfall.

The World Commission on Environment and Development (Brundtland et al 1987) defined sustainability as "ensuring that development meets the needs of the present without compromising the ability of future generations to meet their own needs". To this can be added the need to respond to the pressures increasingly coming to safeguard natural resources. In practical terms it means measuring the appropriateness of the system according to its effects on :

- * The economy
- * Improvement of production
- * The environment
- * The risk of production
- * Social acceptability

In a sustainable system the above-mentioned have to be in balance. The sustainability of beef production on eight farms in the Okahandja region were investigated and the results were as follows.

ECONOMY AND PRODUCTION

All the income and expenses of eight farms for the past ten years were analysed and the average was calculated. The

TABLE 1: THE AVERAGE INCOME AND EXPENSE PER HECTARE ON AN AVERAGE BEEF PRODUCTION SYSTEM IN THE OKAHANDJA REGION.

	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
*GFE/ha	5.71	7.03	7.37	7.64	8.2	10.75	8.18	11.76	13.44	13.48
Interest/ha	1.28	1.68	2.33	3.03	5.05	3.48	2.93	4.06	4.07	6.47
Household/ha	2.68	2.98	3.31	3.67	4.08	4.54	5.04	5.60	6.23	7.00
Total Expense/ha	9.67	11.69	13.01	14.34	17.33	18.77	16.15	21.42	23.74	26.95
**GFI/ha	25.71	19.16	18.62	11.16	25.25	15.56	28.75	35.00	31.37	27.63

*GFE/ha = Gross Farm Expenses (licks, fuel, Veterinary expenses, reparation costs etc.)

**GFI/ha = Gross Farm Income

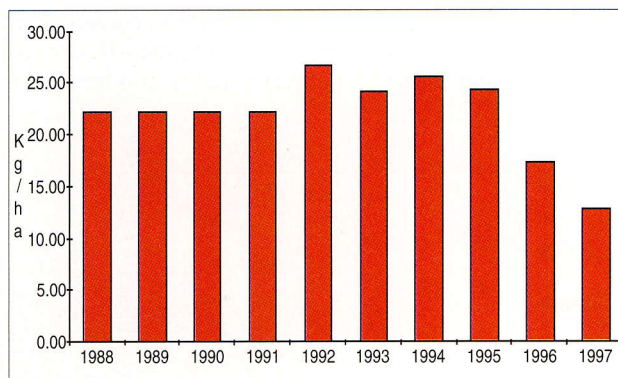


FIGURE 1: AVERAGE STOCKING RATE (KG/HA)

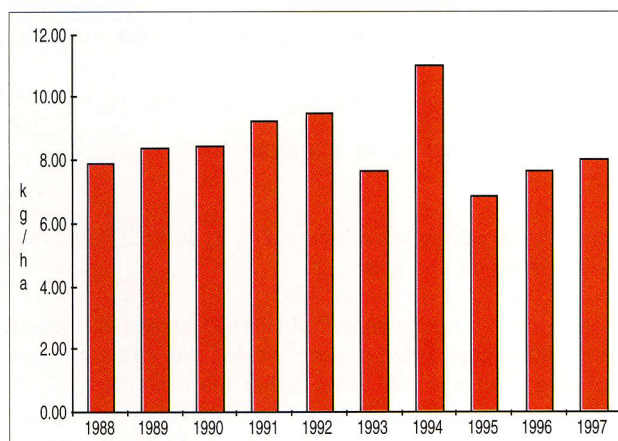


FIGURE 2: AVERAGE PRODUCTION (KG/HA)

average value of each independent variable was then calculated per hectare for better comparability.

The average rainfall for the period was 340mm. The average stocking rate was 22 kg/ha (Figure 1) while the stocking rate during the recent drought was as low as 13 kg/ha. Within the low stocking rate the average meat production over the last 10 years was still between 7-8 kg/ha (Figure 2).

In Table 1 the average income and expense per ha can be seen.

TABLE 2: THE AVERAGE INCOME AND EXPENSES ON A 6000HA CATTLE FARM.

	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
GFE	4260	42180	44220	45840	49200	64500	49080	70560	80640	80880
Interest	7680	10080	13980	18180	30300	20880	17580	24360	24420	38820
Household	16080	17880	19860	22020	24480	27240	30240	33600	37380	42000
Tot. Expenses	58020	70140	78060	86040	103980	112620	96900	128520	142440	161700
GFI	154200	114960	111720	66960	151500	93360	172500	210000	188220	165780
GFI - Tot. Expen	96180	44820	33660	-19080	47520	-19260	75600	81480	45780	4080

A graphical comparison between Total Farm Expenses (TFE) {TFE= Gross Farm Expenses (GFE) + Interest + Household expenses} and Gross Farm Income (GFI) can be seen in Figure 3.

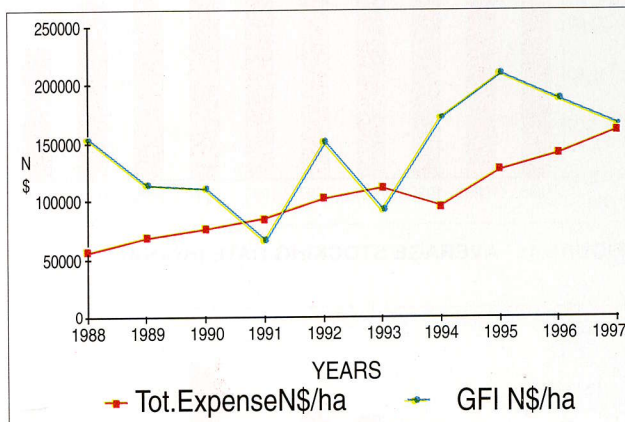


FIGURE 3: GFI VS TOTAL EXPENSE

When these values are converted to a 6000ha cattle farm the following can be seen.

From figure 3 it can be seen that 1990-91 as well as 1992-93 were difficult economic seasons for the cattle farmers because the expenses were higher than the income. The higher income during 1993-94 was because of an increase in the average meat price of 51%. The huge increase in GFI during 1994-95 was because of the drought (an average of 181,5mm rain - 56% less than average) and the farmers had to sell a big portion of their breeding stock. The expenses during this period were also higher than usual because a lot of feed had to be bought during the drought (Lick and fodder expenses showed an increase of 120% from 1994 until the end of 1996). The real effect of the drought can be seen during 1996 because there was very little beef production.

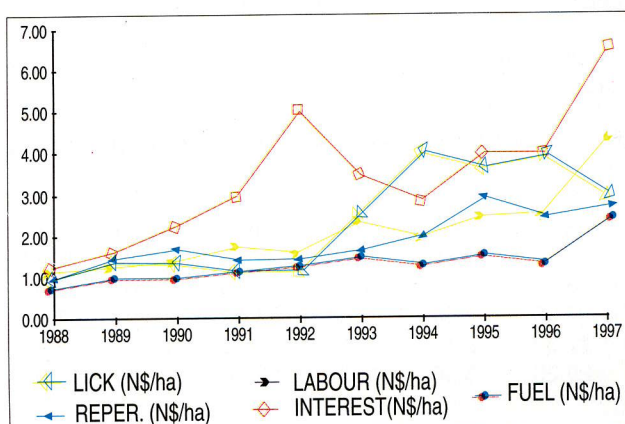


FIGURE 4: FARM EXPENSES PER HECTARE

(The average rainfall was 185mm with some farms just 30mm). More feed was being bought, and therefore the interest per hectare also increased with 30.5% from 1994 until 1997.

In figure 4 the most important farm expenses can be viewed.

In figure 4 it can be seen that interest had the biggest contribution to the GFE and thus has the biggest influence on the profitability of a farm. Farmers thus have got to reduce the amount of foreign capital as far as possible in order to stay sustainable.

If the net income for the past ten years is being calculated it can be seen that there is still a positive balance of N\$342 600 (N\$34 260 per year). With this money the farmer still has to pay additional rent, capital payments, new fixed improvements, new capital purchases, and other non-farm expenses. The conclusion is thus that beef production was economic viable for the past ten years, but during the last four years the margin was very small.

The Environment, Risk Of Production And Social Acceptability

The knowledge about and the maintenance of the balance within the grazing ecosystem of a farm has to be one of the management goals for the farmer to be able to farm sustainably. If the grazing ecosystem is in balance, rain can be utilised more effectively and the risk of droughts can be minimised. The sociological sector (labour) also plays an important role in the production of beef and must therefore not be underestimated. Sustainable agriculture should therefore not be seen as a set of practices to be fixed in time and in space. It implies the ability to adapt and change as external and internal conditions change.

The above mentioned parameters in practical circumstances were judged by a judging panel consisting of myself, a recent master conservation farmer and an extension officer. The participating farms were visited during April 1997 and were judged out of a total of 211 points for:

1. Efficient grazing control and conservation
2. Farm management
3. Human resource management
4. Financial management
5. General farm efficiency
6. Participation in organised agriculture

The different chapters of the questionnaire will now be discussed.

Efficient grazing control and conservation

The average score of the participants was 80%. The marks varied between 66.25% and 93.75%. We had no difficulty in

judging this division and we as judges had the feeling that the participants had a very good knowledge about their grazing management, and conservation practises were practised randomly.

Farm management

This division included stock management, veterinary control and record keeping.

The average point was 76% with a variation between 63% and 86%. The lowest mark was achieved by a weekend farmer, and the difference between a full time farmer and a weekend farmer's ability to manage the farm was once again proofed. The lack of management has a big influence on beef production and on human resource management.

Human resource management

This division had an average mark of 73% with a variation between 40% and 100%. The weekend farmer had once again the lowest mark. It can therefore be stated that the absence of a farmer causes unfavourable human relations. Some of the problems which derived out of this unfavourable relations was theft, a lack of performance and a high turnover of labourers.

Financial management

This division included financial record keeping and efficient financial management. This division had very good results and the average score was 83% with a variation between 65% and 100%. Some of the main aspects which were evaluated were annual budgets, cash flow budgets, income and expense statements and marketing.

Aspects which were at a very high standard were marketing, and cash flow budgets.

General farm efficiency

This division had an average score of 68% with a variation of 52% and 80%. We felt that farmers do not make any more improvements on their farms because of very high prices and no more subsidies. The overall impression was however very good.

Participation in organised agriculture

The average score was 81% and the variation was between 70 and 100%. This high score shows that these farmers are very active within their community and are therefore socially acceptable.

General discussion

The average score for this section was 76.83%. Most of the farmers who were visited maintained a very conservative stocking rate during the past ten years. The risk of production because of droughts could therefore be opposed. The real effect of the recent drought will however have an financial effect on most of the farmers. The GFE showed an increase

of 32.26% the past ten years while the average beef price showed a 10.22% increase and the GFI showed a 23.43% increase. In the light of these findings it can therefore be said that, if these farmers did not have a sustainable outlook on their farms, they wouldn't have survived the recent drought financially.

CONCLUSIONS

The results of this analysis add to a growing evidence suggesting that a large-scale shift to a more ecological agriculture is viable. The heuristic value of this exercise lies in the example it sets for designing and planning for other farmers in this country which is ecologically, as well as socially and economically, sustainable. Many directions could be chosen, but if sustainability is indeed desirable, long-term thinking and planning is necessary.

The challenge for sustainable utilisation of the resources during the production of beef rest with the implementation of good grazing principles with long-term productivity and profitability as a goal. The eight farms which were judged showed that sustainable beef production is still possible to achieve in a modern society. If sustainability is not a farmer's goal, will we be able to answer to the following?

"God will not seek thy race,
nor will He ask thy birth:
alone He will demand of thee -
What hast thou done with the land I gave thee?"
(Ancient Persian Proverb)

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