

# Evaluation of communal beef production systems at different production levels and systems



## AIM OF THE STUDY

The South African government and several non-governmental institutions have introduced initiatives to empower communal livestock farmers to mainstream beef production. Some of these initiatives failed because recipients did not receive appropriate guidance and support. This has led land reform beneficiaries (both communal and emerging farmers) to make unfortunate choices such as adopting unprofitable production systems. A good production system is one of the major drivers of farm economic returns. The objective of this study is to compare economic efficiencies of weaner and ox production systems, each at a traditional communal and improved production level.

## MATERIALS AND METHODS

In the weaner production system, cattle were sold at 9 months of age and at 2 years of age in the ox production system. In the improved production system two interventions were introduced:

1. Genes from Nguni cattle, an African indigenous breed known to be well adapted to South African conditions.
2. General cattle management that mimics that of a commercial production system. For example, breeding of animals will be timed or planned according to forage availability and animal health and feeding management will be highly prioritized.

A simulation program was developed to compare economic efficiencies of the different communal cattle production systems. Annual feed requirements were estimated using the concept of grazing animal unit. An animal unit is defined as the 12 kg dry matter equivalent of forage grazed by a 454 kg beef cow with calf over a set period of time. Available land base in the traditional communal production level was assumed to consistently support the entire cattle herd.

Annual operating costs in the traditional communal production level include transport of cattle from the farm to the market site and annual herder salary. Those of the improved production level include transport, additional feed, annual herder salary, veterinary, reconditioning already existing fences, kraals and water supply costs. Costs of buying replacement bulls and heifers are excluded since most farmers produce their own replacements. Gross incomes were calculated using the equation below:

Gross Income =Number of cattle sold x cattle weight x price per kg sold

The herd composition of the different systems is given in Table 1.

Table 1 Herd composition

Inventory	Traditional Production Level		Improved Production Level	
Herd statistics	Ox	Weaner	Ox (extra feed)	Ox (no extra feed)
Breeding cows	100	100	100	62
Breeding bulls	4	4	4	3
Calves <1 yr	24	59	59	37
1 yr<Calves< 2 yr	24	0	59	37
Marketable Oxen/ Weaners	18	41	41	34



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## RESULTS AND DISCUSSION

Table 2 shows that the ox production system without purchasing feed in the improved production level gives a higher net return compared to the other production systems. In this system the number of cows was reduced from 100 to 62.

Table 2 Gross incomes and projected net returns from different cattle production systems<sup>a</sup>

	Traditional		Improved	
	Ox	Weaner	Ox (extra feed)	Ox (no extra feed)
Gross income	R194,340	R125,460	R271,830	R232,560
Operating costs	R20,346	R54,334	R77,623	R31,046
Net returns	R98,994	R71,125	R194,206	R201,514

<sup>a</sup> Payment is based on a per kg live weight basis (R17/kg)

## Conclusion

The most viable and profitable production system for the South African communal and emerging cattle farmers is the improved ox production system without purchasing feed. In this system, farmers would need to keep fewer cows and manage breeding to ensure that adequate feed is available all year round. Depending on the financial needs of communal and emerging farmers, a minimum cow herd of between 30 and 50 cows should be a viable enterprise depending on which ox production system is used. This will give the farmer a net income of between R64,735 and R67,171 per year.

National and provincial governments, policy makers, scientists, development practitioners and agricultural extension officers can use this information to guide communal and emerging farmers on the most optimal production system they need to follow.

